

# THE SPINY ORB-WEAVER GENERA *MICRATHENA* AND *CHAETACIS* (ARANEAE: ARANEIDAE)

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**ABSTRACT.** *Micrathena* and *Chaetacis*, members of the subfamily Gasteracanthinae, share two specialized characters: fourth femora longer than first and book-lung covers with stridulatory ridges. Along with other gasteracanthine species, they have a sclerotized ring around the spinnerets and a paramedian apophysis in the palpus. Both genera are neotropical, with only few species of *Micrathena* extending their ranges into the nearctic region.

A function of the spines on the abdomen might be to disguise the spider's outline when resting in the web.

There are 104 species of *Micrathena* and nine species of *Chaetacis*. Twenty-nine species of *Micrathena* are new and four of *Chaetacis*: *M. glyptogonoides* from central and northern Mexico; *M. lenca*, *M. tziscao*, *M. petrunkevitchi*, and *M. margerita* from Chiapas, Mexico; *M. banksi* from Cuba; *M. gurupi* from Suriname; *M. kochalkai*, *M. atuncela*, *M. bogota*, *M. marta*, *M. anchicaya* from Colombia; *M. pilaton*, *M. balzapamba*, *M. guayas*, *M. pichincha* from Ecuador; *M. huanuco*, *M. exlinae* from Peru; *M. ucayali*, *M. embira*, *M. coca* from the upper Amazon; *M. bananal*, *M. alvarengai* from Mato Grosso, Brazil; *M. reali*, *M. teresopolis*, *M. guanabara*, *M. jundiá*, *M. soaresi* from southeastern Brazil; and *M. coroico* from Bolivia; *Chaetacis osa* from Costa Rica; *C. carimagua* from Colombia and Venezuela; and *C. cucharas* and *C. woytkowskii* from Peru.

*Ildibaha* is a new subjective synonym of *Micrathena*.

Misplaced species are *Micrathena beta* di Caporiacco, a linyphiid; *M. conspicua* and *M. necopinata*, which are *Chaetacis*; and *Chaetacis rouxi*, a *Micrathena*. There are 93 new synonyms of *Micrathena* names, some uncertain because of difficulty in matching sexes and immatures with adults, others uncertain because of difficulty interpreting old Walckenaer's descriptions.

## INTRODUCTION

The genus *Micrathena* contains many species of tropical, woodland orb-weavers which are diurnal in habits, spiny and often strikingly colored. Most species cannot readily be determined. They have been known for two hundred years; names and descriptions date back to Linnaeus. Among the earliest descriptions are those of Perty, with good accompanying illustrations. Perty's drawings, like those of Hahn and C. L. Koch, are readily recognizable depictions of *Micrathena* species. Confusion arose when Walckenaer based names on illustrations of his that were never published, and apparently are lost.<sup>2</sup>

His inadequate, often contradictory descriptions are difficult to match with specimens. Despite Reimoser's (1917) studies and comparisons, and Chickering's five papers on the genus, *Micrathena* remained in a state of confusion.

My predecessors were hampered in their work: Reimoser's collections were small, and types of many names were not available to him. Thus, he accidentally gave new names to species described previously by Simon and Strand, authors who did not illustrate their new species. Chickering (1960-1964) failed to indicate how he separated the many related species. Even within the last fifty years additional species have been described and named from immature specimens that do not show diagnostic characters of adults; other descrip-

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<sup>2</sup> They could not be found in the Laboratory of Arachnids, Laboratory of Entomology, nor in the central Library of the Muséum National d'Histoire

Naturelle, Paris, nor in the Library of the British Museum (Natural History).

tions lack the essential illustrations. Are these all distinct species or redescriptions of previously described ones?

One purpose of this revision was to see whether the very dimorphous males and females could be associated (Plates 1, 2). Of the 180 species of *Micrathena* listed in catalogs, only six were known from both females and males; 139 from females alone, 26 from males; and 3 from immatures (Roewer, 1942; Brignoli, 1983).<sup>1</sup> Only recently was Chickering (1960, 1961) able to match males and females of another four species.

Another question to be addressed concerns the function of the spectacular spines on the abdomen (Plates 1, 2): Do they provide a defense against predatory wasps, lizards or birds? More important, how does the genus fit into the evolutionary schema of the Araneoidea? Is their inability to attack-wrap prey, as do other orb-weaving spiders (Robinson, 1975; Eberhard, 1982), really a primitive character?

This is the first in a series of papers presenting revisions of tropical American orb-weavers of the families Araneidae, and Tetragnathidae.

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<sup>1</sup> While 12 are listed in catalogs as known from both sexes, six turned out to be mixtures or synonyms of other species known from both sexes (Roewer, 1942; Brignoli, 1983).

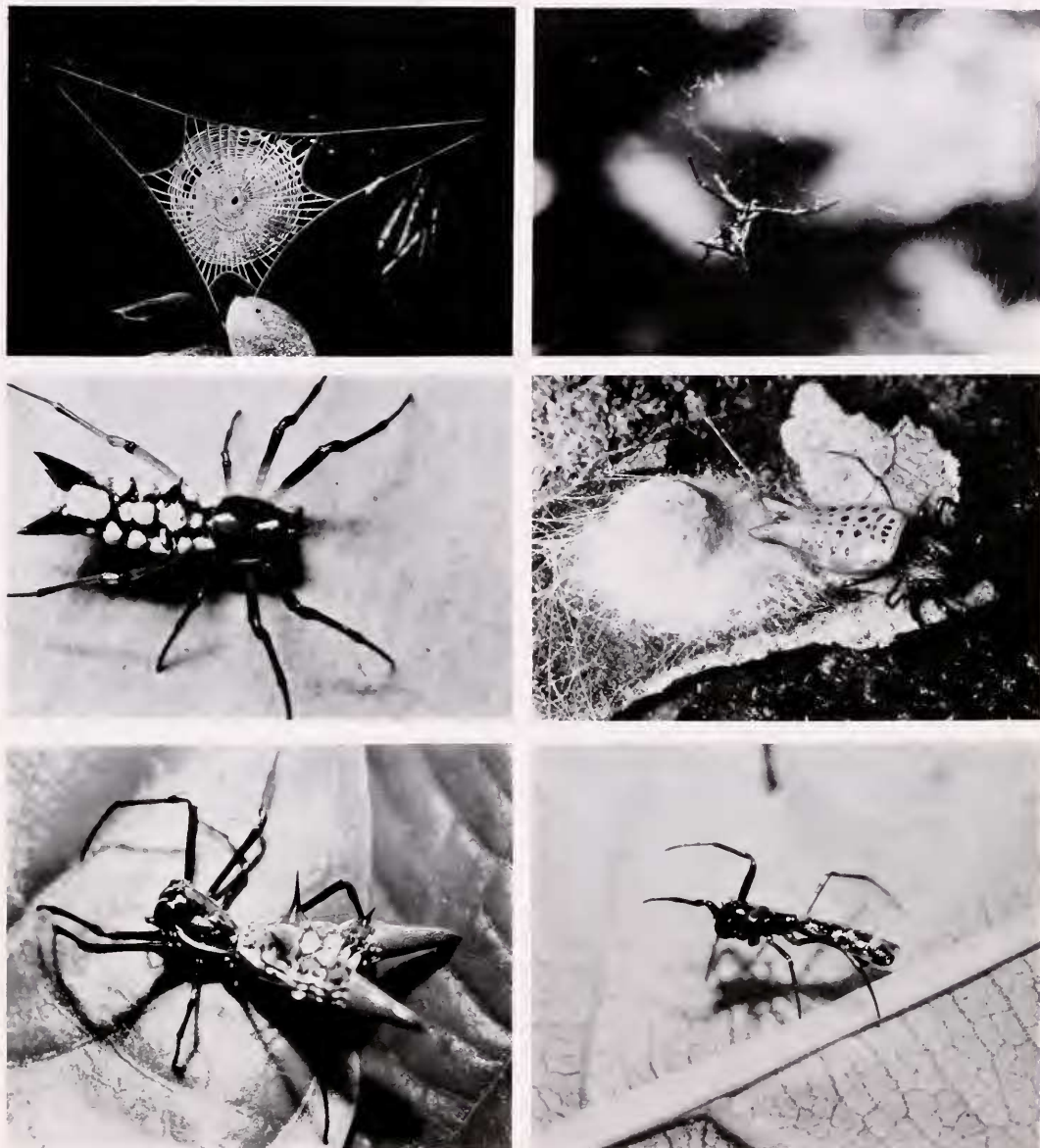


Plate 1. Upper row, left. Web of *Micrathena molesta*; orb about 8 cm diameter. Right. *M. schreibersi* in web. Middle row, left. *M. funebris*. Right. *M. furcula* with egg-sac. Bottom row. *M. sexspinosa*. Left. Female. Right. Male.

(Photo credits. upper left and middle row, right: J. Coddington; middle row, left: W. Maddison.)

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## METHODS

*Examination and Illustrations.* Reflections make it difficult to examine the sculpturing of a dark structure with a stereoscopic dissecting microscope at fairly high power and under intense illumination. To avoid reflections, female *Micrathena* specimens were positioned on black silicon carbide (Carborundum®;

Opell, 1983) in order to illustrate the epigynum and the dorsal and lateral views of the body. Later the specimens were transferred to a substrate of pale sand for drawing the profile of the epigynum and for measuring. Male palpi were illustrated while first on white paraffin with suitable depressions to observe the outline, then moved to black for studying the structure. Reflections could be further reduced by placing the palpus into a deep hole carved in the black paraffin. A Dolan-Jenner Fiber Lite (System 181-1) was used for illumination. This transmits a small but strong light beam from each of its two flexible arms; for illustrating, the right arm can be pushed aside to permit illumination from the upper left only.

The epigyna were placed in approximately the same positions to permit comparison. Palpi were illustrated in mesal view and showing the paracymbium in lateral view. In lateral view the palpi were positioned so that the tip of the conductor or median apophysis were barely visible, allowing easier repetition and comparison with others (Figs. 25, 497, 572).

Illustrations were made of the internal female genitalia of some species, but were discontinued when they were found to be of little aid in separating species, as they only supported characters found in the three-dimensional epigyna.

The drawings of epigyna are unorthodox in having the venter up in posterior view, and facing left in profile illustrations (Figs. 3–5). Had they been drawn conventionally (venter down, dorsum up), the body would have shadowed the light coming from the upper left. The epigynum was not removed from the specimen for illustration.

*Measurements.* Total length was measured from the clypeus to the midline at the end of the abdomen, between the posterior spines. Leg article measurements were made on the intact specimen in sand. Thus, figures are estimates to one tenth of a millimeter because of error in parallax, measuring different aspects of the article,

and because of measuring with a 400 square grid reticle eyepiece at low power. Measurements to one hundredth of a millimeter (as reported in many current revisions) would necessitate the amputation of legs and mounting on a slide for examination at high power to permit repetition of the same measurements.

*Mapping.* Finding collecting localities is always difficult because of poorly handwritten labels, misspellings, localities with similar names, and changes in locality names and spellings. To find names the following were used: gazetteers of the Geographic Society Index to Maps of Hispanic America, published 1944; the gazetteers of the U.S. Board of Geographic Names published by the U.S. Government for Latin American countries, 1954–1963. For nineteenth century Mexican and Central American localities, Selander and Vaurie (1962) is useful. Most important are the Ornithological Gazetteers currently published for South American countries and available from the Bird Department of the Museum of Comparative Zoology. The ornithological gazetteers give nineteenth century collecting sites of birds, many of which are the same for spiders.

Literature citations of lists of spiders found were not used, since experience has shown that many are misidentified. Only recently a list of spiders for a North American state was published, containing erroneous records and names long ago synonymized. While *Micrathena sagittata* appears on faunal lists of the West Indies, no specimens were found in collections; collections include only the similar *M. militaris*. It is an almost hopeless task to expunge such misidentifications from catalogs.

*Associating Males with Females.* The biggest problem in the genus is matching males and females (Plates 1, 2). The following assumptions and procedures were used:

The first step was to sort females into species groups and to associate each male with a species group. Females from trop-

ical America were sorted into species groups using the form of the epigynum as the predominating character. When placing the four species occurring north of Mexico by this criterion, it was found that each belonged to a different group. It was assumed that males and females of the four well-known species from north of Mexico were correctly matched (Levi, 1978). This assumption provided information on the form of the palpus for the three groups containing most species. The fourth species group, the *funeris* group, contained only *M. funeris*. Next, it was assumed that the common *M. schreibersi* and *M. sexspinosa* had been matched correctly by Chickering, providing information on males of two additional species groups. Males not belonging to any of the above groups were then assumed to represent the *triangularispinosa* and *lepidoptera* groups. To match males of these last two groups proved most difficult and time consuming.

The next step was to match collecting sites of males and females of the same group. However, because several related species may have overlapping distributions, associating even those males and females collected together is not reliable. It is here that mistakes may have been made. Also, some commonly occurring males were eventually matched to commonly occurring females; some were matched by elimination, others because of similar color of the sternum. Any attempt at associating males with females is more likely to be correct if done within the framework of a revision rather than as a result of casual field collecting. Still, I hope that field work and observed matings will show whether my pairs are correct.

*New Species.* New species were named only if both the genitalia and the carapace or abdomen differed. It is often difficult to decide whether a single specimen with aberrant genitalia, unusual texture of the abdomen, or additional spines represents a new species or variability within one species.



Plate 2. Upper row, left. *Micrathena clypeata*. Right. *M. lepidoptera*. Middle row, left. *M. molesta* with parasitic mite on right anterior of abdomen. Right. *M. saccata*. Bottom row. *M. triserrata*. Left. Female. Right. Male.

(Photo credits. Upper row, right: J. Coddington. Middle row, right: A. Aiello. Bottom row: W. Maddison.)

## RELATIONSHIPS

*Micrathena* and *Chaetacis* have always been thought closely related, but their relationship to other araneids has been considered uncertain. Simon (1895) placed *Micrathena* in his large family Argiopidae (including Tetragnathidae and Linyphiidae), subfamily Argiopinae, group Micratheneae. F. P.-Cambridge (1904) divided the family into subfamilies: Theridiosomatinae, Linyphiinae, Tetragnathinae, Metinae, Nephilinae, Argiopinae, Araneinae, and Gasteracanthinae (including *Micrathena*). The first five are now considered families, the last three subfamilies. Dahl (1913) split the family, creating 12 subfamilies in the Araneidae, and separating Gasteracanthinae and Micratheneinae without explanation.

The synapomorphous characters which unite *Micrathena* and *Chaetacis* are:

1. *Micrathena* and *Chaetacis* have a stridulatory surface on the book-lung covers (absent, perhaps lost, in the *M. spinosa* and *M. militaris* species groups). This stridulating surface (Plate 3) is a synapomorphy of the two genera, a character not known from other orb-weavers except some erigonids (Hinton and Wilson, 1970). It is assumed that the presence of the structure in araneoid Erigonidae and araneoid Araneidae is parallel evolution and not a synapomorphy.

2. *Micrathena* and *Chaetacis* species have the fourth femora longer than the first, a synapomorphy not found in any other araneid genus. It permits the unique, cryptic resting position known from *Micrathena* (but assumed for *Chaetacis*; Plate 1).

3. In *Micrathena* and *Chaetacis* the carapace is glabrous, almost always lacking setae (except in *M. furcula*), with sculpturing and often a series of one to three pairs of dimples and a high thorax (Plates 1, 2). The *triangularispinosa* group has a glossy, domed carapace without dimples or grooves. Both the dimples and the often high or dome-shaped thorax are

unique to these araneid genera and are a synapomorphy of the two genera. I consider carapace shape an important character to unite species, species groups, and genera in Araneidae. It has been underrated because of the difficulty in describing this part of the spider's anatomy.

4. In all species of *Micrathena* and *Chaetacis* the paracymbium is relatively large and modified (Figs. 8, 9). It is not in *Gasteracantha*; in most araneid genera (except perhaps in *Verrucosa*) it is just a knob. In males of the Metidae and Tetragnathidae it is a very large structure; this is a parallel development and not indicative of relationship.

Heimer (1982) and Heimer and Nentwig (1982) state that the function of the paracymbium is to stop the twist of the expanding palpus by butting against the median apophysis (first observed by Grasshoff, 1968), and that the median apophysis matches and fits the paracymbium. Although the paracymbium is large and modified in many *Micrathena* and *Chaetacis*, it does not closely fit and match the size or shape of the median apophysis. The median apophysis does, however, match and fit (to some extent) the scape of the female epigynum into which it hooks during mating (Grasshoff, 1968).

*Micrathena*, *Chaetacis* and *Gasteracantha* are placed in the subfamily Gasteracanthinae because of the sclerotized ring around the spinnerets. This ring is not otherwise found in araneids, except for the neotropical *Xylethrus* and *Enacrosoma*, whose placement is uncertain. It could be argued that the ring is a poor character, evolving in connection with a sclerotized abdomen. However, there is as yet no good evidence that *Xylethrus* and *Enacrosoma* have evolved the ring independently (they might also be gasteracanthines). Also, the remaining genera with a sclerotized abdomen, such as *Acanthepeira* and *Wagneriana*, lack the ring. *Micrathena* and *Gasteracantha* are also united by the lack of attack-wrapping, a behavior believed present in most Araneidae species. Since

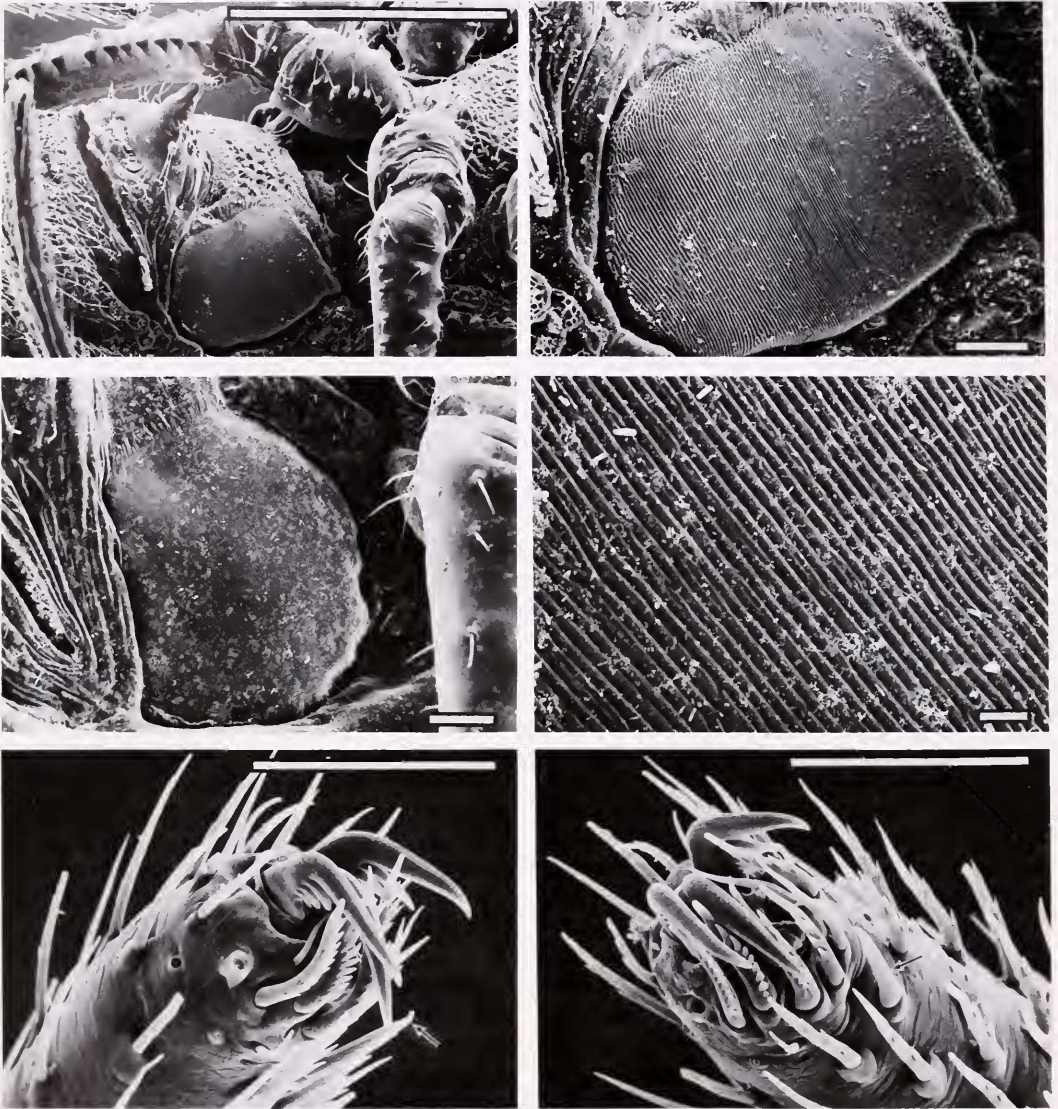


Plate 3. Upper row. *Chaetacis aureola*. Left. Epigynum, left book-lung, fourth coxae. Right. Left book-lung cover of *C. aureola*. Middle row, left. Book-lung cover of *Micrathena mitrata*. Right. Close-up. Bottom row. Tip of left fourth leg of *Micrathena mitrata* with sustentaculum (arrow).

Scale lines. Upper left 1.0 mm; right middle row 0.01 mm; others 0.1 mm.

this is a lost character it may be a poor one. Although the grouping of *Micrathena*, *Chaetacis* and *Gasteracantha* is supported at present, the support is not convincing. More characters are being sought.

According to Reimoser (1917), Gaster-

acanthinae lack a sustentaculum (Webestachel). The sustentaculum is a macroseta with a bent tip, located below the claws on the tip of the leg. It was found on *M. mitrata* (arrows, Plate 3); I suspect it is present in other species.



The relationship of Gasteracanthinae to other araneids is more problematic. The following characters were examined in an attempt to relate the Gasteracanthinae to other araneids.

1. *Paramedian Apophysis*. Many of the most useful structures indicating relationships are found in genitalia, especially in the complicated araneid palpus (see Levi, 1983). Characteristic of *Micrathena*, *Chaetacis*, and *Gasteracantha* is the relatively simple appearance of the contracted or expanded palpus (Figs. 6–9; Levi, 1978). But despite their apparent simplicity, both the *Micrathena* and *Gasteracantha* palpi have a paramedian apophysis (PM in Figs. 6, 7, 9), a sclerite not found in all male Araneidae. This structure, usually cap-shaped, was first described and named by Comstock (1910) in the palpus of *Eriophora*. Its function is not known. In *Eriophora* and other genera (Table 1), it is usually found near the proximal end of the conductor in the center of the mesal face of the palpus; it is fused to the conductor in *Verrucosa* (Levi, 1976: fig. 9) and in *Cyclosa* (Levi, 1977: fig. 17). It is a free sclerite in *Acanthepeira* (Levi, 1976: fig. 21), *Eriophora* (Levi, 1970: fig. 2), *Wagneriana* (Levi, 1976: fig. 71) and *Wixia* (Levi, 1976: fig. 99). It is absent in many araneids (Table 1; in *Eustala* the conductor has a projection that might be homologous). The absence of the paramedian apophysis is assumed to be the plesiomorph state and not a secondary loss (with some exceptions; see next paragraph). The paramedian apophysis is a prominent sclerite in *Gasteracantha* (Levi, 1978: fig. 84); in the *Micrathena* *mitrata* species group it is attached to the end of the conductor (Levi, 1978: fig. 40). It might be present as a lobe of the conductor in the *M. gracilis* group (Levi, 1978: fig. 68). It is absent in *M. funebris* (Levi, 1978: fig. 27), and absent in *M. sagittata* (Levi, 1978: fig. 54). Is the absence in some species of *Micrathena* a secondary loss? More weight is given to the unique long fourth femur and unusual web resting po-

sition, the unique carapace dimples, and the sclerotized ring around the spinnerets, characters which leave no doubt that all species groups of *Micrathena* are closely related. Gasteracanthinae thus forms a group of genera together with *Verrucosa*, *Acanthepeira*, *Cyclosa*, *Eriophora*, *Wagneriana*, and *Wixia* (and perhaps with other genera whose paramedian apophysis has been lost secondarily; see below).

2. *Terminal Apophysis*. The terminal apophysis is found in most araneid spiders. It is a synapomorphy of a large group containing most araneids. Within this group the size and shape of the terminal apophysis may be useful, but at present its use as a character is uncertain. It is absent in *Argiope*, *Gea* (Levi, 1983), *Acanthepeira* (Levi, 1976: fig. 21), and *M. schreibersi* (Fig. 9). Its absence in *Argiope* and *Gea* is probably plesiomorph (Levi, 1983). The structure may have been lost in *Acanthepeira*, as a paramedian apophysis is present. It is lost in *M. schreibersi*; in other *Micrathena*, in *Chaetacis* and in *Gasteracantha* it is present as a mere flap covering the embolus (A in Figs. 6–8). In *Araniella*, *Acacesia* and *Neoscona* the terminal apophysis is small. The paramedian apophysis may have been secondarily lost in *Araniella* and *Acacesia* (probably not in *Neoscona*).

3. *Distal Hematodocha*. Males having a paramedian apophysis, which include *Micrathena*, *Chaetacis* and *Gasteracantha*, lack a distal hematodocha and have a small terminal apophysis. *Verrucosa* is an exception (Table 1). In most genera close to *Araneus* the distal hematodocha is present and is a synapomorphy of these genera (Table 1).

4. *Coxal Hook*. The first coxa of araneid males has a prominent hook at the distal margin, ventral in most genera. It fits into a groove at the proximal end of the second femur (Figs. 1, 2). Hook and groove are present in most species of *Araneus* (but not in all; Table 1). Coxal hook and groove are absent, perhaps secondarily lost, in *Acanthepeira*, *Hypsosinga*, *Kaira*, *Larin-*

TABLE 1. TABLE OF CHARACTERS OF MALE SPIDERS OF SOME ARANEID GENERA.

	ET	CX	CDY	PM	DH	TA	Species examined
Argiopinae	-	-	-	-	-	-	
Mecynogea	-	-	-	-	-	-	
Cyrtophora	-	-	-	-	-	-	
Pronous	+	+	-	-	-	-	
Hypsoyinga	+/-	-	-	-	*	**	<i>rubens, pygmaea</i>
Kaira	-	-	-	-	**	*	<i>alba</i>
Larinia	+	-	-	-	**	**	<i>directa</i>
Araneus	+/-	+/-	+/-	-	**	**	
Aculepeira	+	+	+	-	**	**	<i>carbonaria, packardii</i>
Cercidia	+	+	-	-	**	**	<i>prominens</i>
Colphepeira	+	+	-	-	*	**	<i>catawba</i>
Eustala	+	+	+	-	*	**	<i>clavispina, fuscovittata</i>
Mangora	+	+	+	-	**	**	<i>gibberosa, placida</i>
Metazygia	+/-	+	+/-	-	**	**	<i>gregalis, wittfeldae</i>
Metepeira	+/-	-	-	-	**	**	<i>ventura, foxi</i>
Nuctenea	+	+	-	-	**	**	
Singa	-	+	-	-	**	**	<i>eugeni</i>
Scoloderus	-	+	-	-	-	*	<i>cordatus</i>
Araniella	+	+	+	-	-	*	<i>displicata</i>
Acacesia	+	+	+	-	-	*	<i>hamata</i>
Verrucosa	+	+	-	A	*	**	<i>arenata</i>
Cyclosa	+	+	-	A	-	*	<i>conica, turbinata</i>
Micrathena	-	+/-	-	F/A	-	*	
Chaetacis	-	-	-	F/A	-	*	all
Gasteracantha	-	-	-	F	-	*	<i>cancrifformis</i>
Acanthepeira	+	-	-	F	-	-	<i>stellata</i>
Eriophora	+	+	+	F	-	**	<i>edax</i>
Wagneriana	+	+	+	F	-	**	<i>tauricornis</i>
Wixia	+	+	+	F	-	**	<i>ectypa</i>

Abbreviations:	ET	endite tooth	Key:	(-)	absent
	CX	coxal hook		(+)	present
	CDY	condyle on dorsum of coxa I		*	small
	PM	paramedian apophysis		**	large
	DH	distal hematodocha		A	attached
	TA	terminal apophysis		F	free

*ia* and *Metepeira* (Table 1). Both are also absent in *Argiope* and *Gea*, although here this is almost certainly a plesiomorph condition, as they are absent in all non-araneid Araneoidea.

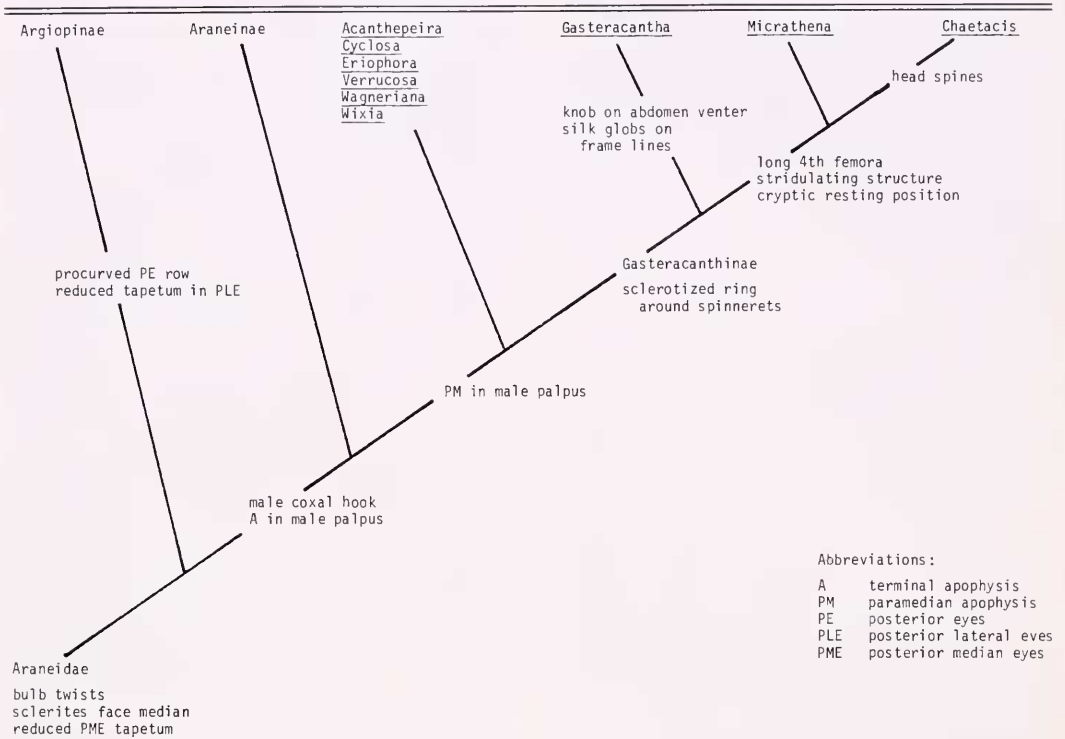
This coxal hook is present in species of the *M. kirbyi* and *M. guerini* groups of *Micrathena* only; it is small and is more posterior on the coxa (Fig. 2). A matching groove on the second femur is present (Fig. 1). Only *M. clypeata* shows a prominent ventral hook. In other *Micrathena* species groups and in *Chaetacis* and *Gasteracantha*, the coxal hook is absent, assumed secondarily lost because the paramedian apophysis is present. In species belonging

to the same group more weight is given to the presence of a structure than to its absence.

5. *Tooth on Endite.* *Micrathena* and *Chaetacis* males also lack a tooth on the lateral face of the endite facing a similar tooth on the palpal femur. This structure is present in most araneid genera examined (Table 1). It is absent, perhaps secondarily lost, in *Larinia*, *Scoloderus*, *Wagneriana* and probably absent primitively in *Argiope* and *Gea*. Its absence cannot be used to relate genera.

*Summary of Relationships.* *Micrathena*, *Chaetacis* and *Gasteracantha* belong together in the subfamily Gasteracanthi-

TABLE 2. TENTATIVE CLADOGRAM SHOWING POSITION OF SUBFAMILY GASTERACANTHINAE WITHIN THE FAMILY ARANEIDAE (SEE ALSO TABLE 1).



nae, a group of Araneidae with specialized characters. (The subfamily Argiopinae exhibits many primitive characters; Levi, 1983.) The inability to attack-wrap must therefore be a secondary loss and not the primitive condition (Tables 1, 2).

*Unsolved Problems.* Foremost among the numerous unresolved questions is whether the males of species have been correctly matched to females. Does the male with a *Chaetacis*-like palpus (Fig. 790) actually belong to *M. pungens*? Are the specimens assigned to *M. furva* in fact southern specimens of *M. digitata*? Why are females of the *M. agriliformis* group (including *M. fidelis* and *M. pupa*) relatively uncommon compared to males? Are they misidentified? Is the widespread *M. lucasi*, with its variable spines, really a single species? To answer this question it would be helpful to have more males col-

lected with females. Do some highly variable *Micrathena* species hybridize, as is suggested by specimens in collections? This applies especially to *M. plana* and *M. triangularis*, *evansi* and *triangularispinosa*, and to variable *Chaetacis* species.

#### Gasteracanthinae O. P.-Cambridge

Gasteracanthides O. P.-Cambridge, 1871: 217. Name given to a new family. Bonnet, 1957: 1974.

Included in this subfamily are araneid genera, in which both males and females of the species have a sclerotized ring around the spinnerets.

There may be five or six gasteracanthine genera in America. *Gasteracantha* includes two species: *G. tetracantha* in Puerto Rico, and *G. cancriformis* from the southern United States to northern Argentina. The two species are not genetically

isolated in the Bahamas, and intergrade in appearance (Levi, 1978). *Micrathena* and *Chaetacis* are revised here.

Other American gasteracanthine genera may be *Enacrosoma* Mello-Leitão, *Xylethrus* Simon, and *Thaumastobella* Mello-Leitão. Practical considerations made me revise *Micrathena* and *Chaetacis* first: the species are readily recognized and sorted out from collections, and therefore available for borrowing. Behavior observations are available. *Enacrosoma* Mello-Leitão and the rare *Xylethrus* will be revised later. No specimens other than the lost type of *Thaumastobella mourei* Mello-Leitão have been found. We do not know whether or not members of these three genera attack-wrap, or whether the ring around the spinnerets is a synapomorphy for all genera.

*Pronous* Keyserling and *Tecmessa* O. P.-Cambridge have been placed in the subfamily (Roewer, 1942; Brignoli, 1983). Neither is a gasteracanthine. The placement of *Pronous* is uncertain (Table 1); *Tecmessa* is a theridiosomatid (Coddington, in press).

Numerous gasteracanthine genera are known from Africa; some had been synonyms of *Gasteracantha* but were resurrected by Benoit (1962).

### *Micrathena* Sundevall

*Micrathena* Sundevall, 1833: 14. Read in April 1833 (F. P.-Cambridge, 1904: 525); publication date unknown. Type species *Epeira clypeata* Walckenaer, the only species listed in section one of the genus, designated by Simon, 1895.

*Acrosoma* Perty, 1833: 193. Published in December 1833 (F. P.-Cambridge, 1904: 525). Type species *A. swainsoni* Perty designated by F. P.-Cambridge 1904: 525. Bonnet, 1955 curiously cites two type species: *Aranea cancriformis* Linnaeus, the oldest species included by Perty, and *M. militaris* Perty, the first species cited by Perty (see below).

*Meganopla* Simon, 1864: 292. Type species *M. cyanospina* (Lucas) designated by Bonnet, 1957: 2752.

*Keyserlingia* O. P.-Cambridge, 1890. Type species by monotypy *K. cornigera* O. P.-Cambridge (= *M. sexspinosa*). The name *Keyserlingia* is preoccupied by Pander, 1861 for a Brachiopod.

*Ildibaha* Keyserling, 1892: 31. Type species *I. albomaculata* (= *M. flaveola*) Keyserling by monotypy. NEW SYNONYMY.

*Synonymy.* Of the two oldest names, both proposed in 1833, *Micrathena* has priority. Bonnet (1957) claims that, since Sundevall was the only author to distinguish between *Micrathena* and *Gasteracantha*, one has to use Sundevall's name *Micrathena*. However, it is the type designation for the genus which determines its use, not the species included. Because types were often casually designated by later authors, the type designation is frequently difficult to ascertain. Roewer, in the first volume of his catalog (1942) fails to give a type for genera; Bonnet's catalog often gives a different type designation from that found in the literature (also for *Acrosoma*), and does not say who designated the type species.

The type of *Micrathena*, *M. clypeata*, belongs to the *kirbyi* group; that of *Acrosoma*, *M. swainsoni*, belongs to the *militaris* group, as does the type of *Meganopla*, *M. cyanospina*. The type of *Keyserlingia* belongs to the *spinosa* group, and the type of *Ildibaha*, *I. albomaculata*, to the *M. triangularispinosa* group of species.

*Diagnosis.* *Micrathena* and *Chaetacis* differ from other gasteracanthine genera by having the fourth femur longer than the first (in females and males). *Micrathena* differs from *Chaetacis* by lacking spines or tubercles on the carapace behind the lateral eyes. Both differ from *Gasteracantha* by the differently shaped carapace: *Gasteracantha* has the anterior head region very high (Levi, 1978: figs. 70, 71), while *Micrathena* and *Chaetacis* do not. *Chaetacis* has tubercles or spines behind the lateral eyes and often has denticles on the carapace. Unique to *Micrathena* are the high thorax, low head, and the glabrous, sculptured carapace with a deep thoracic depression (Figs. 89, 90), often with one to three pairs of dimples (Figs. 74, 75). Larger species have a light colored rim on each side of the thorax; in smaller species the rim can be seen only from the side. Only the *triangularispinosa* group of species has the carapace different: domed and smooth, often shiny,

with at most a faint depression in the area of the thoracic depression (Figs. 432, 433).

Other characters unique to *Chaetacis* and *Micrathena* are the stridulating ridges on the book-lung covers (Plate 3), the pick being a tubercle on the fourth femur. However, members of the *M. militaris* and *M. spinosa* groups lack these structures, perhaps a secondary loss.

*Description.* The posterior median eyes are subequal to two diameters of the anterior medians. The laterals are usually smaller, the posterior laterals usually smallest. Anterior median eyes are their diameter apart, posterior median eyes about their diameter apart. Lateral eyes touch, except in the *militaris* and *spinosa* groups, which may have the eyes as much as one diameter apart. The tapetum of the posterior median eyes is reduced to a narrow section, characteristic of the family Araneidae (Levi, 1978: figs. 19, 32).

The abdomen of *Micrathena* females bears large spines, sometimes tubercles or humps; as in other members of the Gasteracanthinae, there is a sclerotized ring around the spinnerets. The dorsum is often shiny and brightly colored: white, yellow, orange to brown; the venter is usually gray to brown (Plates 1, 2).

The male never has a tooth on the endite, nor a tooth on the palpal femur. Half the species have a coxal hook (Fig. 2) and a groove on the proximal end of the second femur (Fig. 1). Both tooth and groove are relatively small (compared to the structures in other genera) and the coxal hook has moved retrolaterally (except in *M. clypeata*, where it is ventral). In half the species both coxal hook and femoral groove are absent, apparently secondarily lost. Males often have the first two pairs of legs slightly heavier and with macrosetae, but not otherwise modified.

The abdomen of *Micrathena* males lacks spines (except *M. swainsoni* and *M. donaldi*) and is square to rectangular, longer than wide, very unlike that of the female associated with it. The abdomen of males of the *M. schreibersi* group has a constriction (Fig. 570). Males may be

only slightly smaller than females (*guerini* group), or may be much smaller (e.g., *gracilis* group).

*Genitalia.* Females of *Micrathena* may have a wrinkled scape on the epigynum (Figs. 50, 55, 68), a primitive character. The epigynum has evolved into a raised transverse bar bearing a posteromedian lobe, both situated on a bulge that is delimited anteriorly by a transverse groove (Fig. 3); in profile the structure looks like a bird's head (Fig. 5). While half the species have a transverse bar with a lobe, others have only a sculptured bulge, with the sculpturing mainly on the posterior face (*triangularispinosa* group, Figs. 428, 434; *militaris* and *spinosa* groups, Figs. 584, 591, 648, 656). In all members of the *gracilis* group the bulge is pulled out ventrally, laterally flattened, and indented (Figs. 778–780).

The palpus has a conductor (C), almost always a large median apophysis (M) (lost in *M. flaveola* and *M. acutooides*), a radix (R), an embolus (E), and a small terminal apophysis (A) paralleling or surrounding the embolus (Figs. 6–9). The terminal apophysis is lost in the *M. schreibersi* group (Fig. 9). There is abundant basal hematodocha but no distal hematodocha, just a joint between radix and terminal apophysis-embolus. The proximal end of the conductor is drawn out into a paramedian apophysis (PM), which is usually cap-shaped and remains attached to the conductor (Figs. 6–9). As in metids, but unlike most other genera of the Araneidae, the paracymbium (P) is well developed; in some groups it is different in each species (Figs. 6–9).

*Natural History.* All *Micrathena* are forest species that hang in the vertical web during the day. *Micrathena* builds in the morning. The web is tight, with few frame threads and an open hub (Plate 1). It may have a short, vertical silk stabilimentum (*M. sexspinosa*). The spiders have an unusual resting position: the spider hangs head down in the center of the web with abdomen horizontal, parallel to the ground. This position is made possible by

the unusually long fourth femora (Plate 1). The often bright dorsal coloration of the abdomen faces the ground, effectively camouflaging the spider against the light blotches of the canopy. The dull underside faces upward and blends with the background vegetation and ground litter, making the spider equally hard to discern from above. The spines disrupt the spider's outline, preventing easy detection. The variable silhouette of different species adds to the difficulty of finding *Micrathena* species, as collectors cannot readily form a search image for a species. No species is very common in any locality, and different species, with different outlines and coloration, occur together. Furthermore, immatures often have different spination from adults.

Is the function of the spines to hamper the formation of a search image? Experiments might be devised to see if this is a defense against natural predators such as wasps, dragonflies, birds, or lizards. The long spines of *M. cyanospina* (Fig. 621) may be a direct protection against being carried off by predators. Also, it is known that some species of wasps will collect a specific *Micrathena* (but will not mix species, as they do with other genera). Large collections of the following were obtained from wasp cells: *M. mitrata*, *M. furcula*, *M. sexspinosa*, and *M. swainsoni*.

*Micrathena gracilis* and *M. horrida* have humps rather than spines (Figs. 774, 776, 777), and are gray to brown in color, rendering the spider invisible among the debris caught in the web. Robinson and Robinson (1980) call *M. horrida* a detritus mimic. Some specimens of *Micrathena funebris*, a variable species, have the black abdomen with orange spots framed by white (Plate 1; Fig. 734), a pattern found in juveniles of the venomous widow spiders (*Latrodectus* sp.). *Micrathena swainsoni* has been collected with similarly colored ants.

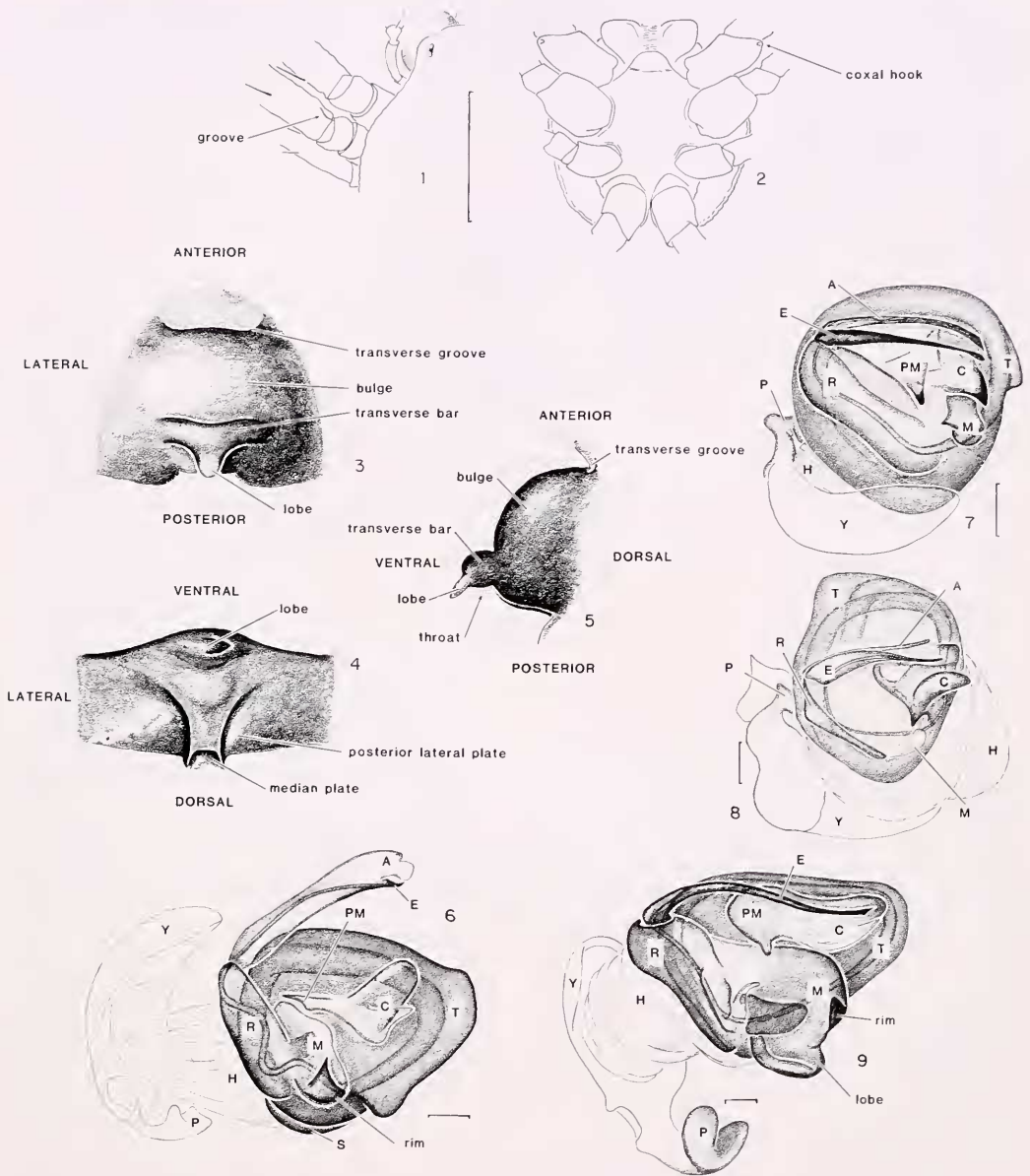
*Micrathena* do not attack-wrap (Robinson, 1975; Eberhard, 1982). Unlike oth-

er araneids, they bite their prey first, then wrap. Do the long fourth femora that facilitate the spider's cryptic resting position perhaps impede the extraction of wrapping silk? Probably not: the related *Gasteracantha*, with shorter fourth legs, does not attack-wrap either.

Uetz and Biere (1980) showed that the web of *M. gracilis* is selective for prey size: larger prey (4 to 8 mm) is caught than in artificial webs: Diptera comprise 66% of the catch, Hymenoptera 18%, and Coleoptera 10%.

Males are rarely collected with females. They are more likely to be picked up sweeping, often at night, while females are usually picked from their webs in daytime. It is uncommon to find males in the webs of females. Also, it is extremely uncommon to find mated males of species in which palpal structures break off and remain in the female epigynum (*M. spinosa* group). Is mating brief? Does it take place outside the web? Do males serve as food for the mated females? Robinson and Robinson (1980) have watched courtship and mating of *M. schreibersi* and *M. sexspinosa*. They state that *Micrathena* has type C courtship: copulation is brief and carried out on a mating thread. *Micrathena sexspinosa* males convert a radius from the upper part of the female's web into a mating thread. In each of the five observations the male was loosely wrapped by the female, allowing him to escape. Adult males taken to the laboratory died soon after collecting, indicating a short adult life span. It was also found that the constricted abdomen of *M. schreibersi* males (Figs. 570) permits them to "bend" when mating (Robinson and Robinson, 1980).

In this study it was found that in *M. schenkeli* and *M. molesta* as well as some other species (*M. raimondi*, *M. teresopolis*, *M. shealsi*, *M. bogota*), the lobe and sometimes the transverse bar of the female epigynum tears off during mating, presumably preventing later matings (Figs. 396–401, 482–486). In *M. militaris* and most species of the *spinosa* group, the



Figures 1-9. *Micrathena* morphology. 1, 2. Males. 1. Dorsal view of left side of head, proximal articles of palpus and first three legs, showing groove on second femur. 2. Ventral view of sternum, endites and coxae, showing coxal hook on first coxa. 3-5. Female epigynum. 3. Ventral. 4. Posterior. 5. Lateral. 6-9. Male left palpus, expanded. 1, 2, 6. *M. nigrichelis*. 7. *M. evansi*. 8. *M. flaveola*. 9. *M. schreibersi*.

Scale lines. 0.1 mm, except Figures 1, 2, 1.0 mm.

Abbreviations. A, terminal apophysis; C, conductor; E, embolus; H, basal hematodocha; M, median apophysis; P, paracymbium; R, radix; S, subtegulum; T, tegulum; Y, cymbium.



Map 1. The number of species of *Micrathena* in different areas.

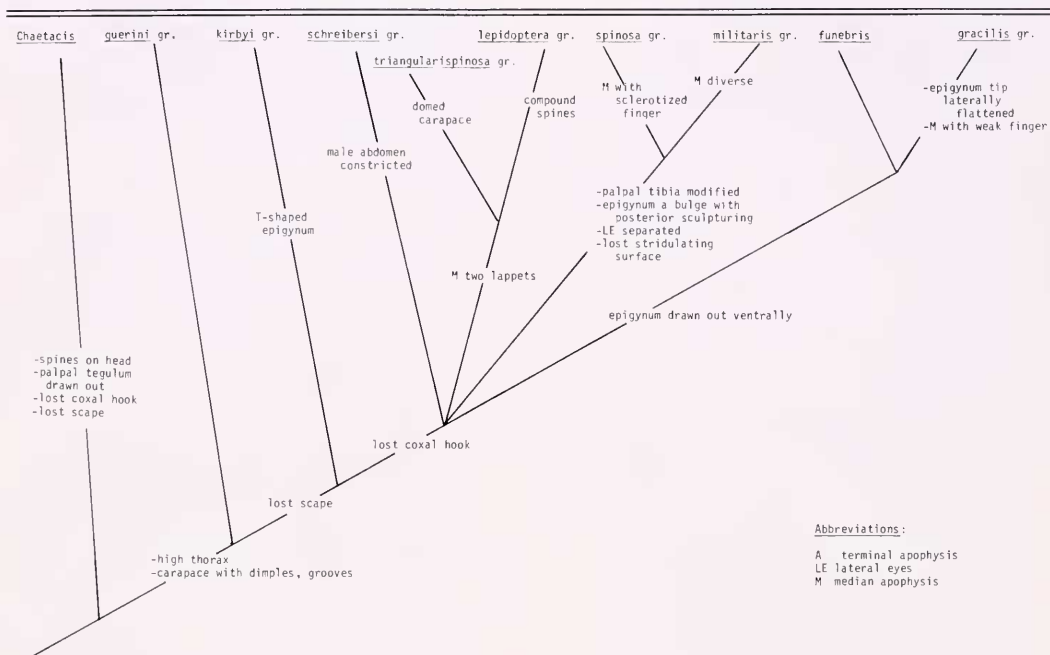
embolus and terminal apophysis of the male palpus break off and plug the epigynum (Figs. 605–607, 729–731), making further matings impossible for males and difficult for females.

Females place eggs in a fluffy egg-sac on vegetation near the web. Further knowledge is limited and comes from photographs (Plate 1). Young *Micrathena* look quite different from adults collected with them, and juveniles described as new species are exceedingly difficult to match with adult females. Juvenile males differentiate from females gradually, over the course of several instars. It would be instructive to raise young of different species

groups from egg-sacs. Most species of the *Micrathena spinosa* group have an additional pair of spines as juveniles (Fig. 721); *Micrathena quadriserrata* immatures have fewer spines than do adults.

*Micrathena* and *Chaetacis* species have stridulating files on their book-lung covers (Plate 3) and pick on the fourth femora, and can produce an audible, low pitched buzz (Hinton and Wilson, 1970). The book-lungs act as a sounding board. These stridulating areas are present also in males, but could not be found in species belonging to the *M. spinosa* or *M. militaris* groups. The sound is probably a defense, as the spiders buzz when removed from



TABLE 3. CLADOGRAM OF SPECIES GROUPS OF MICRATHENA (*MICRATHENA PUNGENS* IS NOT INCLUDED).

the web. I have been unable to hear the sound, despite testing females of several species.

**Distribution.** *Micrathena* is a neotropical genus. Three species range to the eastern United States, one to the western states, seven to Mexico north of the Isthmus of Tehuantepec. There are 34 species in Central America south of the Isthmus; about 33 in the Andes and westward; about 34 in Venezuela and the Amazon basin; and 31 in southeastern South America (Map 1). In the Caribbean, two species occur in Jamaica, three in Hispaniola, four in Cuba, and nine in Trinidad; only one species at most occurs on the smaller islands of the West Indies (Map 1).

Different species are found at different elevations. For example, *M. fidelis*, *M. pupa*, and *M. agriliformis* are found in mountains; other species such as *M. clypeata* and *M. schreibersi* are found in lowland forests.

*Micrathena* are absent from the tropics of other continents, where numerous

species of the related *Gasteracantha* may occupy the same niche. While there are many species of *Gasteracantha* in other parts of the world, only two are found in the Neotropics (Levi, 1978).

**Species Problems.** Many *Micrathena* species were found to be variable, yet most are reasonably easy to distinguish, unlike the Old World *Gasteracantha* species. *Gasteracantha* species are known to be perplexingly variable and difficult to determine; they may hybridize (Chrysanthus, 1959; Emerit, 1974).

Genitalia are critical for separating species of the *Micrathena guerini*, *kirbyi* and *spinosa* groups. In some species groups (e.g., *schreibersi*, *militaris*, and *gracilis* groups) the shape of abdomen and carapace is often also diagnostic. Some species have so distinct an abdomen that immatures can be determined, but in many species immatures may have more (*spinosa* group) or fewer spines than adults (some species of the *kirbyi* group).

**Relationships of Groups.** The possible

relationships of the groups of species are shown in Table 3.

**Misplaced Species**

The following species had been misplaced.

- Acrosoma aureolum* C. L. Koch, 1836: 60, is a *Chaetacis*.
- Acrosoma affinis* C. L. Koch, 1839: 131, is *Chaetacis aureola* (C. L. Koch).
- Acrosoma cornuta* Taczanowski, 1873: 268, is a *Chaetacis*.
- Acrosoma pictum* C. L. Koch, 1836: 61, is a *Chaetacis*.
- Acrosoma transitorium* C. L. Koch, 1839: 119, fig. 518 is a *Wagneriana*.
- Acrosoma tumida* Taczanowski, 1879: 120, pl. 1, fig. 34, ♀ from Paltaypamba, Peru (PAN), examined = *Wagneriana undecimtuberculata* (Keyserling, 1864). NEW SYNONYMY. This name had been listed in Roewer (1942: 854) in *Aranea*, and in Bonnet (1955: 1948) in *Araneus*.
- Micrathena beta* di Caporiacco, 1947: 26; 1948, fig. 81, ♂ from Guyana is an adult male linyphiid, genus unknown. NEW FAMILY PLACEMENT.
- Micrathena conspicua* Mello-Leitão, 1929, is *Chaetacis picta* (C. L. Koch).
- Micrathena necopinata* Chickering, 1960c, is a *Chaetacis*.

**Doubtful Names**

Most of the doubtful names are Walckenaer's. His collection is lost, and thus not available for species verification. His descriptions refer to a manuscript of *Plectana* illustrations which was never published and is lost. I have synonymized names where the descriptions fit the species. The following remains:

*Plectana bisicata* Walckenaer, 1841: 194. This has ten split spines and a total length of 9 mm. It comes from South America. The description is unintelligible.

Other doubtful names are those of Mello-Leitão. This author often did not provide illustrations. Although most of his types are purported to be in the Museu Nacional, Rio de Janeiro, only few can be found there. The types deposited in other institutions were examined.

*Micrathena mastonota* Mello-Leitão, 1950. Female 7.5 mm total length from Est. Espírito Santo, Brazil (no. 58 345, MNRJ), lost. The carapace is low,

flat, granulate, and has a small thoracic depression. The abdomen is highest at the spinnerets and has two anterior spines, six more on each side in two groups. The sides have four rounded tubercles, the posterior face a spine on each side, for a total of 16 spines. Perhaps this is *M. triangularis*?

**KEY TO MICRATHENA SPECIES GROUP**

Females

- 1. Carapace evenly domed, often smooth and shiny, thoracic depression absent or an indistinct dent (Figs. 432, 433, 440, 441, 456, 457, 480, 481) ..... *triangularispinosa* group; p. 528
- Carapace with distinct circular thoracic mark, usually not shiny, often with dimples (Figs. 26, 27, 136, 137, 525, 526) ..... 2
- 2(1) Epigynum drawn out ventrally into a cone, with cone tip laterally indented (Figs. 743-745, 758-760, 778-780) ..... *gracilis* group; p. 588
- Epigynum otherwise ..... 3
- 3(2) Epigynum with a raised transverse bar on the bulge, usually with a posterior median lobe (Figs. 3-5), rarely V-shaped (Figs. 96, 151), triangular (Figs. 104, 112, 361, 378), profile usually bird's head-shaped (Fig. 5) ..... *kirbyi* group (in part); p. 460
- Epigynum otherwise ..... 4
- 4(3) Abdomen with two lateral spines compound and posterior spines tripartite as in Figures 526, 535 ..... *lepidoptera* group; p. 546
- Spines on abdomen simple ..... 5
- 5(4) Epigynum with a scape (Figs. 28, 30, 50, 55, 63, 68) or anterior lobe (Figs. 12, 20, 33, 42), sometimes torn off (Figs. 76, 86) and abdomen with 4 or 6 spines, or 8 small spines, none anterior (Figs. 27, 49, 75, 80, 85) ..... *guerini* group; p. 447
- Epigynum without scape or lobe; or, if with lobe, then abdomen with anteriorly directed spines overhanging carapace ..... 6
- 6(5) Epigynum with a ventrally drawn-out bulge, often with light patch on anterior (Figs. 735-737) and abdomen with two to six fleshy spines (Figs. 732-734); U.S., to Central America, Map 12 ..... *funebri*; p. 586
- Epigynum and abdomen otherwise ..... 7
- 7(6) Epigynum with projecting bulge, drawn out posteriorly, and two black openings on the posterior face (Figs. 786-788); abdomen with two large spines behind, one anterior pair and three lateral pairs (Figs. 784, 785); Venezuela, Amazon, Map 14 ..... *pungens*; p. 598

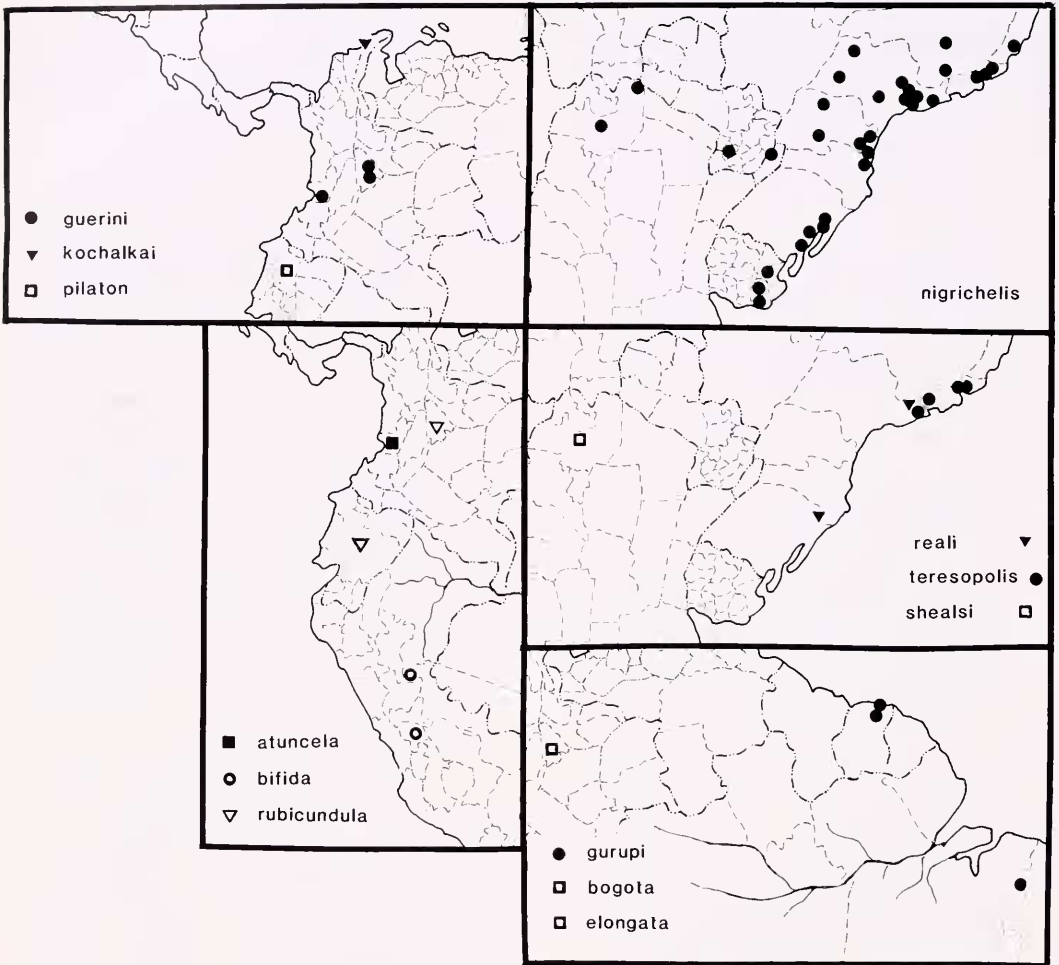
- Epigynum and abdomen otherwise ..... 8
- 8(7) Length of abdomen more than twice width, slightly constricted on posterior half (Figs. 544, 639); southeastern Brazil to northern Argentina ..... 9
- Shape of abdomen otherwise ..... 10
- 9(8) Abdomen with ten humps tipped by spines (Figs. 543, 544); epigynal bulge with a pair of dents anteriorly (Fig. 545) ..... *spitzi*; p. 550
- Abdomen with eight sharp spines (Figs. 638, 639); epigynal bulge evenly curved anteriorly (Fig. 640) ..... *swainsoni*; p. 571
- 10(8) Abdomen without anterior spines, posteriorly biforked, with two to three pairs of dorsal spines (Figs. 646, 647, 654, 655, 683, 684, 712, 713) ..... *spinosa* group; p. 572
- Abdomen with anterior spines (Figs. 552, 557, 633, 634) ..... 11
- 11(10) Abdomen biforked, forks bent upward; three pairs of small lateral spines and two pairs posterior (Figs. 551, 552); epigynum bulge crowned by a lobe (Figs. 553-555); Upper Amazon, Map 9 ..... *embira*; p. 552
- Abdomen and epigynum otherwise ..... 12
- 12(11) Abdomen flat with a thick spine on each side, six behind (Fig. 419) or with lobes or small spines on sides, double or trifid spines on each side behind (Figs. 395, 406, 411) ..... *kirbyi* group (in part); p. 460
- Abdomen otherwise, with large spines (Figs. 557, 583, 621, 626) ..... 13
- 13(12) Abdomen longer than wide, with a pair of white spines overhanging carapace and four pairs of large spines, third pair largest (Figs. 556, 557, 564, 565, 573, 574) ..... *schreibersi* group; p. 550
- Abdomen as long as wide, or wider than long, with pair of spines overhanging carapace and at most three additional pairs of spines (Figs. 583, 590, 598, 621, 626, 634) ..... *militaris* group; p. 558
- depression absent or at most a slight dent, usually smooth and shiny (Figs. 437, 477, 503) ..... *triangularispinosa* group; p. 528
- Carapace with distinct round thoracic mark, usually not shiny ..... 4
- 4(3) Tegulum with tube-shaped ventral projection (Figs. 790, 791); Amazon, Map 14 ..... suspected male of *pungens*
- Tegulum never with such a projection ..... 5
- 5(4) Distal margin of palpal tibia modified with lobe or lobes or ridges (Figs. 587, 595, 603, 631, 644, 652); without stridulating grooves on book-lung covers ..... 6
- Distal margin of palpal tibia never modified (Figs. 540, 739, 768); with stridulating grooves on book-lung covers (Plate 3) ..... 7
- 6(5) Median apophysis with a more or less sclerotized finger (Figs. 652, 660, 673, 710, 718) ..... *spinosa* group; p. 572
- Median apophysis never with finger (Figs. 595, 603, 614) ..... *militaris* group; p. 558
- 7(5) Median apophysis a sclerotized, curved spine (clockwise in left palpus), its base bearing a second spine (Fig. 739); paracymbium a flat corniculate plate (Fig. 740); U.S. to Central America, Map 12 ..... *funebri*; p. 586
- Median apophysis and paracymbium otherwise ..... 8
- 8(7) Median apophysis lightly sclerotized, bearing a lightly sclerotized finger (Figs. 768, 772, 782) ..... *gracilis* group; p. 588
- Median apophysis never with finger ..... 9
- 9(8) Median apophysis consisting of two lobes as in Figures 531, 532, 540, 541 ..... *lepidoptera* group; p. 546
- Median apophysis consisting of a squarish sclerite with its distal edge bent over and heavily sclerotized (males associated with females of *M. excavata*, Fig. 353 and *M. quadriserrata*, Fig. 375) ..... *kirbyi* group (in part); p. 460

## Males

1. Abdomen constricted, suspected ant mimic (Figs. 548, 570, 579) ..... *schreibersi* group; p. 550
- Abdomen without constriction ..... 2
- 2(1) First coxa with hook on distal margin (Fig. 2) fitting into groove on proximal end of second femur (Fig. 1) ..... *guerini* and *kirbyi* groups (in part); p. 447, 460
- First coxa without hook, second femur without groove ..... 3
- 3(2) Carapace evenly domed; thoracic

The *guerini* Group

The *guerini* group is characterized by the female's lack of spines on the anterior of the abdomen, and by the presence of four large posterior spines (Figs. 11, 27) or, sometimes, six smaller spines (Figs. 85, 90). In addition, some species have a pair of spines on the sides (Figs. 54, 90). The epigynum has an anterior lobe or a scape (Figs. 12, 42, 68) which in some species is torn off when mating (Figs. 34, 76, 86). The carapace always has a distinct tho-



Map 2. Distribution of *Micrathena* species of the *guerini* group.

racic depression; some species have pairs of dimples (Fig. 75).

Males always have a hook on the first coxa (Fig. 2) fitting into a groove on the dorsum of the proximal end of the second femur (Fig. 1). The coxal hook is found also in males of the *kirbyi* group but not in others. The palpus is more diverse than in members of the *kirbyi* group. The cymbium may have a hump near its base above the paracymbium (Figs. 16, 17, 39, 47). The terminal apophysis is often sclerotized (Figs. 16, 38, 46); in *M. nigrichelis* it is a flat flap covering the embolus (Fig.

59); in *M. pilaton* it is absent (or perhaps torn off in the available specimens, Fig. 24). Also, the median apophysis and paracymbium show greater diversity (Figs. 46, 47, 59, 72) in structure than in members of the *kirbyi* group.

Diagnostic features of species are the arrangement of spines on the female abdomen, the shape of the scape or lobe and the surrounding area of the epigynum, and the shape of the embolus and terminal apophysis in the palpus.

The key to males is with the males of the *kirbyi* group, p. 467.

## KEY TO THE GUERINI GROUP

## Females

1. Abdomen with 8 small subequal spines, one pair on sides, three pairs posteriorly (Figs. 85, 90); Colombia ..... 2  
 - Abdomen otherwise (Figs. 11, 41, 80) ..... 3  
 2(1) Posterior median piece of epigynum wide ventrally close to scape (Fig. 87) ..... *bogota*  
 - Posterior median piece of epigynum narrow ventrally close to scape (Fig. 92) ..... *elongata*  
 3(1) Abdomen with 6 spines, two pairs posteriorly, one pair on sides (Figs. 41, 54, 80) ..... 4  
 - Abdomen with 4 large spines, two pairs posteriorly, none or small denticles on sides (Figs. 11, 19, 27) ..... 11  
 4(3) Eastern and southeastern South America: Brazil, Paraguay to Argentina ..... 7  
 - Northwestern South America: Colombia to Peru ..... 5  
 5(4) Epigynum with a scape (Fig. 50); Colombia, Ecuador, Map 2 ..... *rubicundula*  
 - Epigynum with a lobe (Figs. 33, 42) ..... 6  
 6(5) Lobe of epigynum rounded (Fig. 42) and projecting ventrally (Fig. 44); Peru, Map 2 ..... *bifida*  
 - Lobe of epigynum with concave lateral margins (Fig. 33), curved posteriorly (Fig. 36); sometimes torn off (Fig. 34); Colombia, Map 2 ..... *atuncela*  
 7(4) Posterodorsal spines (second pair) larger than posterior spines (third pair) (Figs. 61, 66, 79) ..... 9  
 - Second and third pair of spines subequal (Figs. 53, 74) ..... 8  
 8(7) Sternum and venter of abdomen dark; scape of epigynum round (Fig. 55); Rio de Janeiro to northern Argentina, Map 2 ..... *nigrichelis*  
 - Sternum and venter of abdomen light; scape frequently torn off (Fig. 76); northern Argentina, Map 2 ..... *shealsi*  
 9(7) Scape of epigynum smooth and diamond-shaped (Fig. 81); Suriname, Est. Pará, Brazil, Map 2 ..... *gurupi*  
 - Scape wrinkled (Figs. 63, 68); southern and southeastern Brazil ..... 10  
 10(9) Scape of epigynum with distal neck in ventral view (Fig. 68) and with a dewlap (Fig. 70); southern Brazil, Map 2 ..... *reali*  
 - Scape of epigynum without neck (Fig. 63); without dewlap (Fig. 65); Est. Rio de Janeiro, Brazil, Map 2 ..... *teresopolis*  
 11(3) Dorsal pair of abdominal spines longer than ventral pair (Figs. 19, 27) ..... 12  
 - Dorsal and ventral spine pairs subequal in size (Fig. 11); Colombia, Map 2 ..... *guerini*

- 12(11) Epigynum with projecting rounded lobe (Fig. 20); Ecuador, Map 2 ..... *pilaton*  
 - Epigynum with pointed lobe (Fig. 28); northern Colombia, Map 2 ..... *kochalkai*

*Micrathena guerini* (Keyserling)  
Figures 10–17; Map 2

- Acrosoma guerinii* Keyserling, 1863: 79, pl. 2, fig. 12, ♀. Female syntypes from Santa Fê de Bogota [Bogotá], Colombia (BMNH), examined. 1892: 22, pl. 1, fig. 18, ♀.  
*Micrathena guerini*.—Reimoser, 1917: 124, pl. 7, fig. 21, ♀. Roewer, 1942: 959. Bonnet, 1957: 2870. Chickering, 1960c: 79, figs. 50–51, ♀.  
*Micrathena brunnea* Mello-Leitão, 1941: 265, fig. 2, ♀. Female holotype from Bogotá, Colombia (MNRJ), lost. NEW SYNONYMY.

*Synonymy.* The description of *M. brunnea* fits that of *M. guerini*. The type localities of both are the same.

*Description.* Female. Carapace orange, thorax dark brown. Sternum orange-brown. Legs brown. Dorsum of abdomen whitish, spines orange-white; sides black with white patches; venter black. Carapace without dimples or rim; thorax high, almost coming to a point anterior of abdomen overhang. Abdomen with two pairs of posterior spines, dorsal ones longest (Fig. 11). Total length, 7.5 mm. Carapace, 2.9 mm long, 1.8 mm wide. First femur, 2.9 mm; patella and tibia, 2.9 mm; metatarsus, 1.7 mm; tarsus, 0.9 mm. Second patella and tibia, 2.7 mm; third, 1.6 mm. Fourth femur, 3.3 mm; patella and tibia, 2.9 mm; metatarsus, 2.0 mm; tarsus, 1.0 mm.

Male. Carapace orange, sides black. Sternum, coxae orange. Legs dusky orange, first darkest. Dorsum of abdomen with paired white marks, brownish gray and black; venter black. Carapace with a dimple on each side of thoracic depression, and a pair of indistinct dimples more anteriorly. First coxa with hook, second femur with groove. First and second tibia with macrosetae. Abdomen rectangular, with three pairs of small humps on posterior (Fig. 15). Total length, 5.6 mm. Carapace, 2.2 mm long, 1.4 mm wide. First femur, 1.9 mm; patella and tibia, 2.0

mm; metatarsus, 1.2 mm; tarsus, 0.7 mm. Second patella and tibia, 1.7 mm; third, 1.1 mm. Fourth femur, 2.0 mm, patella and tibia, 1.7 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm.

*Variation.* Females vary in total length from 6.7 to 8.4 mm, males from 5.3 to 5.6 mm. The dorsal abdominal spines are sometimes longer than the ventral. Some females have two pairs of very small humps on the sides of the abdomen. The type specimen has the anterior lobe of the epigynum constricted near its base.

*Note.* Males have been collected at the same locality as females near Saladito, Valle, Colombia.

*Diagnosis.* Females can be distinguished from others with anterior lobes on the epigynum by having only four spines of subequal length on the abdomen (Fig. 11); others have six. *Micrathena pilaton* has the dorsal spines longer. Males can be separated from others with a coxal hook by having a hump at the base of the cymbium above the paracymbium (Fig. 17), by the shape of the median apophysis, and by the shape of the conductor, which is folded over at its end (Fig. 16).

*Natural History.* The species is found in cloud forest.

*Distribution.* Colombia (Map 2).

*Records.* COLOMBIA: *Dept. Cundinamarca.* Pacho, 1910, ♀ (NMW). *Valle.* near Atuncela, 1,800 m, 23 Nov. 1969, ♀ (W. Eberhard, MCZ); El Silencia, nr. Cali, 2,000 m, July 1974, ♀ (W. Eberhard, MCZ); Queremal, 2,000 m, June 1977, ♀ (W. Eberhard, MCZ); above Saladito, 1,800 m, 20 March 1970, ♀ (W. Eberhard, MCZ), 3 Jan. 1977, ♀ (H. W. Levi, MCZ),

April 1977, ♀, ♂; April 1979, ♀ (W. Eberhard, MCZ).

*Micrathena pilaton* new species  
Figures 18–25; Map 2

*Holotype.* Female and male paratype from Río Pilatón, Pichincha Prov., Ecuador, Sept. 1944 (G. W. Prescott, MCZ).

*Description.* Female. Carapace blackish brown, head darkest, black sternum. Coxae brown, distal leg articles dark brown. Abdomen black, without marks. Carapace with very high thorax and thoracic mark. Abdomen with four spines, hardly sclerotized (Fig. 19). Total length, 6.5 mm. Carapace, 2.6 mm long, 1.9 mm wide. First femur, 2.9 mm; patella and tibia, 2.9 mm; metatarsus, 1.9 mm; tarsus, 1.0 mm. Second patella and tibia, 2.7 mm; third, 1.7 mm. Fourth femur, 3.2 mm; patella and tibia, 2.9 mm; metatarsus, 1.9 mm; tarsus, 0.9 mm.

Male. Carapace orange, sides of thorax brown. Legs orange-brown. Dorsum of abdomen dark in center, white on sides, venter black. Carapace dull, with microscopic pattern, a distinct thoracic depression and very shallow dimples. Second tibia with macrosetae. Sides of abdomen slightly convex; three pairs of tiny humps posteriorly (Fig. 23). Total length, 5.3 mm. Carapace, 2.2 mm long, 1.4 mm wide. First femur, 1.9 mm. Second patella and tibia, 1.0 mm; third, 0.9 mm. Fourth femur, 2.1 mm; patella and tibia, 1.8 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm.

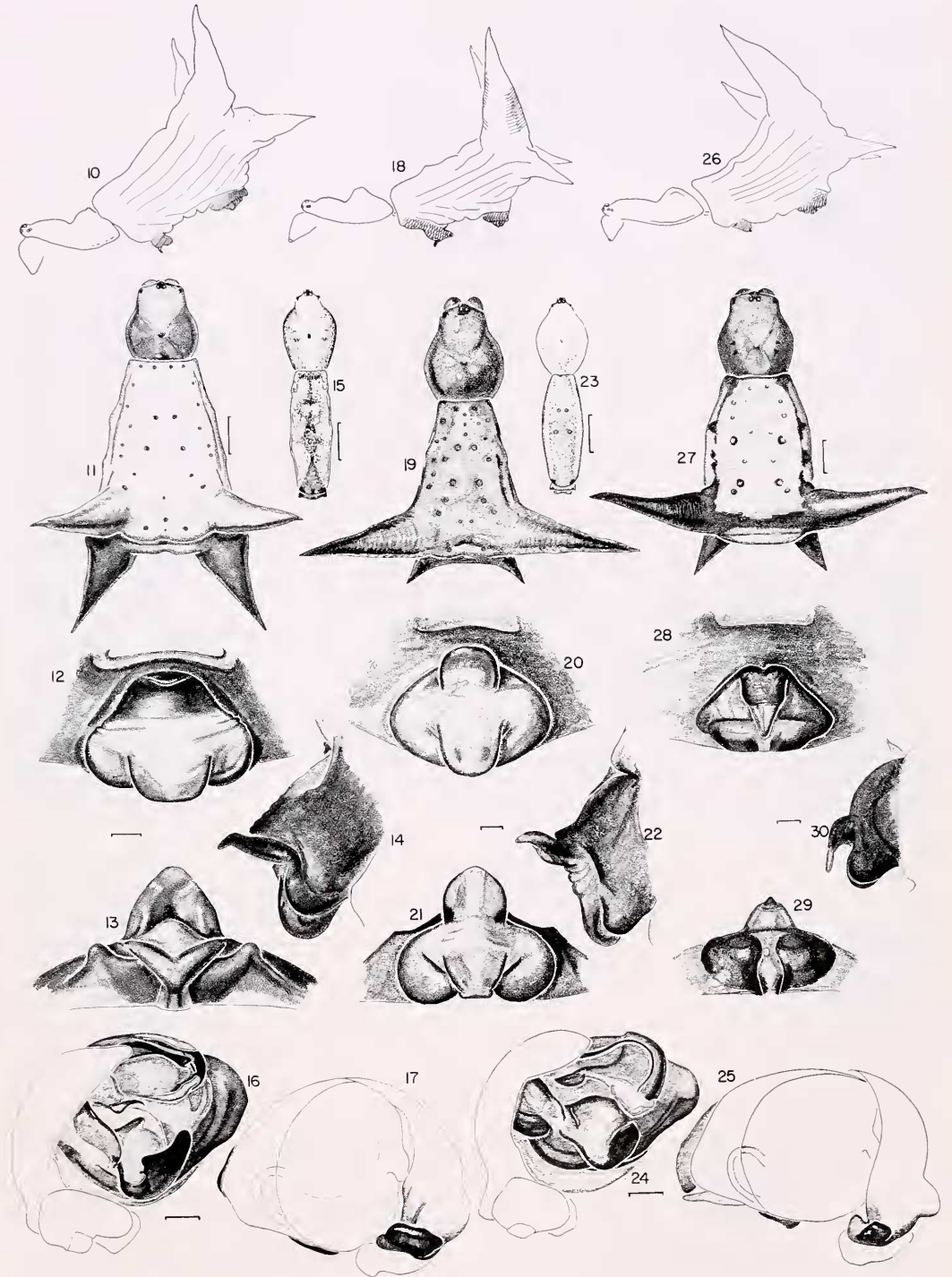
*Diagnosis.* *Micrathena pilaton* can be separated from *M. guerini* by the dorsal spine pair on the abdomen, which is much

Figures 10–17. *Micrathena guerini* (Keyserling). 10–14. Female. 10. Lateral. 11. Dorsal. 12. Epigynum, ventral. 13. Epigynum, posterior. 14. Epigynum, lateral. 15–17. Male. 15. Dorsal. 16. Left palpus, mesal. 17. Palpus, lateral.

Figures 18–25. *Micrathena pilaton* n. sp. 18–22. Female. 18. Lateral. 19. Dorsal. 20. Epigynum, ventral. 21. Epigynum, posterior. 22. Epigynum, lateral. 23–25. Male. 23. Dorsal. 24. Palpus, mesal. 25. Palpus, lateral.

Figures 26–30. *Micrathena kochalkai* n. sp., female. 26. Lateral. 27. Dorsal. 28. Epigynum, ventral. 29. Epigynum, posterior. 30. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 10, 11, 15, 18, 19, 23, 26, 27, 1.0 mm.



longer than the ventral one (Fig. 19). The epigynum has slightly different proportions (Fig. 20) and appears different in posterior view (Fig. 21). Much more distinct is the structure of the male palpus, which convinces me that this is a separate species from *M. guerini*. The median apophysis is more gently lobed; a terminal apophysis is missing (perhaps it has been torn off) (Fig. 24). The hump on the cymbium is more distinct than that of *M. guerini* (Fig. 25).

*Micrathena kochalkai* new species  
Figures 26–30; Map 2

*Holotype.* Female from Serra Nueva Granada, Sierra Nevada de Santa Marta, 1,930 m, Dept. Magdalena, Colombia (J. Kochalka, MCZ). The species is named after the collector.

*Description.* Female. Carapace orange, black on sides. Sternum orange, coxae lighter orange. Distal leg articles orange with gray pigment. Dorsum of abdomen light orange with black marks; spines black; venter black; area between book-lungs light; area between epigynum and spinnerets orange. Carapace with three pairs of dimples, first pair least distinct; thoracic depression and high thorax. Posterior median eyes slightly larger than others, which are subequal. Abdomen with four spines (Figs. 26, 27). Total length, 7.4 mm. Carapace, 2.7 mm long, 2.2 mm wide. First femur, 3.0 mm; patella and tibia, 3.5 mm; metatarsus, 2.2 mm; tarsus, 0.9 mm. Second patella and tibia, 2.9 mm; third, 1.8 mm. Fourth femur, 3.5 mm; patella and tibia, 3.2 mm; metatarsus, 2.3 mm; tarsus, 0.9 mm.

*Diagnosis.* This species differs from *M.*

*guerini* by the narrow, scapelike fold of the epigynum (Figs. 28, 30).

*Micrathena atuncela* new species  
Figures 31–39; Map 2

*Holotype.* Female holotype and six female, one male paratypes from cloud forest, 1,800 m el., above Atuncela, Dept. Valle, Colombia, 23 Nov. 1969 (W. Eberhard, MCZ) (female paratypes, AMNH, BMNH). The specific name is a noun in apposition after the type locality.

*Description.* Female. Carapace light brown, sides darker brown. Chelicerae dark brown. Sternum blackish brown. Legs dark brown, distal articles and fourth leg slightly darker. Dorsum of abdomen white with indistinct black pattern; spines brownish black; sides black with two dorsoventral rows of white spots; venter black with a median white patch behind spinnerets. Carapace with high thorax, a thoracic mark and narrow rim; lacking dimples (Fig. 31). Abdomen with three pairs of large spines and sides almost parallel (Fig. 32). Total length, 7.0 mm. Carapace, 2.3 mm long, 1.8 mm wide. First femur, 2.3 mm; patella and tibia, 2.4 mm; metatarsus, 1.7 mm; tarsus, 0.9 mm. Second patella and tibia, 2.2 mm; third, 1.4 mm. Fourth femur, 2.8 mm; patella and tibia, 2.4 mm; metatarsus, 1.8 mm; tarsus, 0.9 mm.

Male from type locality (having been dry and moldy at one time). Carapace, sternum, legs orange-gray. Dorsum of abdomen with black and white marks; venter black. Carapace without dimples; median thoracic depression distinct (Fig. 37). First coxa with small hook, second femur with proximal groove. First femur and tibia with macrosetae. Abdomen longer

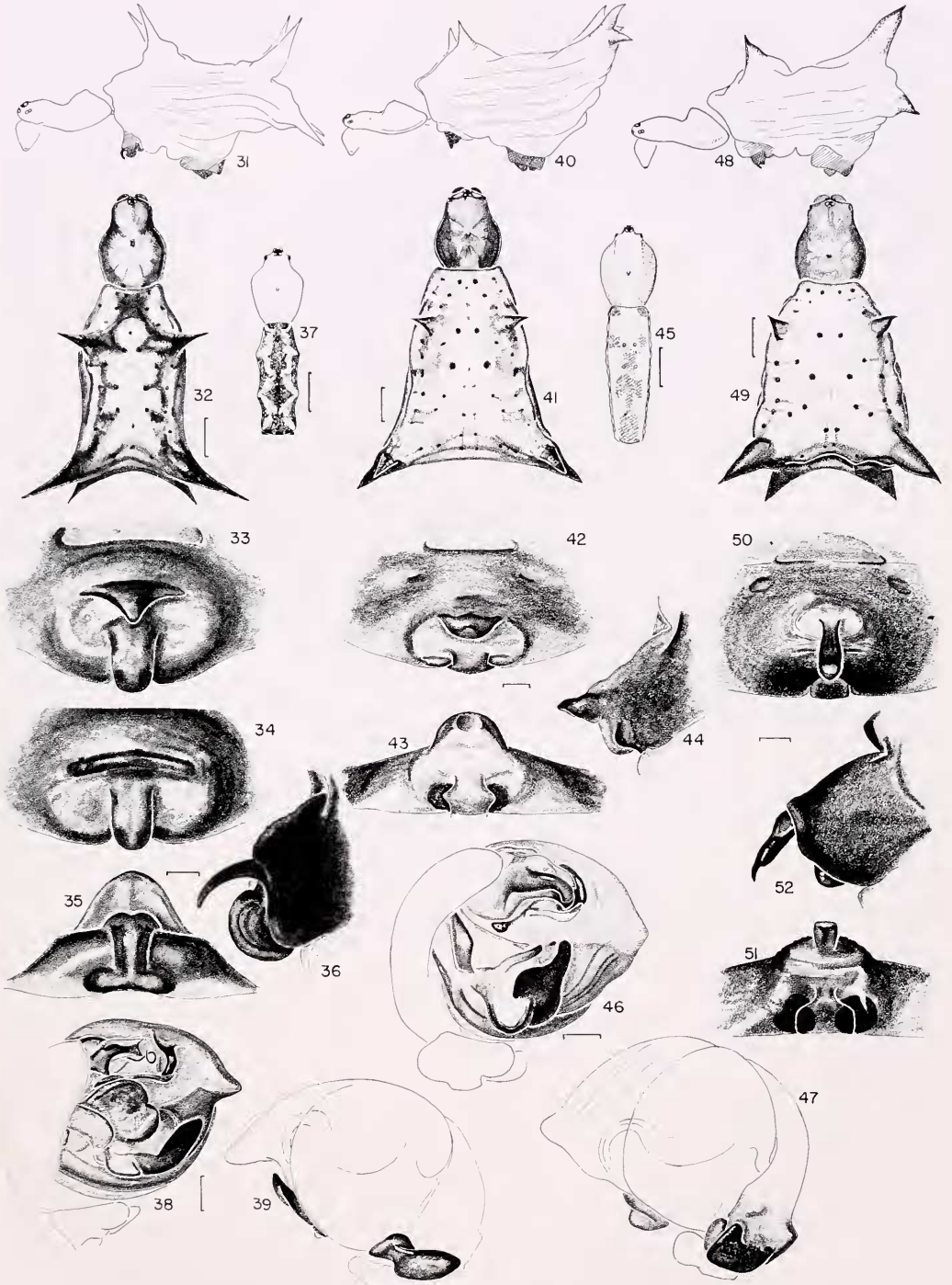
Figures 31–39. *Micrathena atuncela* n. sp. 31–36. Female. 31. Lateral. 32. Dorsal. 33, 34. Epigynum, ventral. 34. Lobe torn off. 35. Epigynum, posterior. 36. Epigynum, lateral. 37–39. Male. 37. Dorsal. 38. Left palpus, mesal. 39. Palpus, lateral.

Figures 40–47. *Micrathena bifida* (Taczanowski). 40–44. Female. 40. Lateral. 41. Dorsal. 42. Epigynum, ventral. 43. Epigynum, posterior. 44. Epigynum, lateral. 45–47. Male. 45. Dorsal. 46. Palpus, mesal. 47. Palpus, lateral.

Figures 48–52. *Micrathena rubicundula* (Keyserling), female. 48. Lateral. 49. Dorsal. 50. Epigynum, ventral. 51. Epigynum, posterior. 52. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 31, 32, 37, 40, 41, 45, 48, 49, 1.0 mm.





than wide, sides almost parallel, slightly scalloped, posteriorly with three pairs of humps (Fig. 37). Total length, 4.2 mm. Carapace, 1.9 mm long. Second patella and tibia, 1.3 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.6 mm; metatarsus, 1.3 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 6.8 to 7.3 mm.

*Note.* The anterior lobe of the epigynum may be torn off (Fig. 34), probably when mating.

*Diagnosis.* The female has one more pair of spines on the abdomen (Fig. 32) than does *M. guerini*. In posterior view, it differs from *M. guerini* by having the dorsal part of the epigynum wider (Fig. 35). Females differ by having a wide anterior lobe on the epigynum (Fig. 33); *rubicundula* has a scape, *M. bifida* a rounded lobe. Unlike *M. guerini*, the male's embolus has a coil near its tip (Fig. 38).

*Natural History.* All specimens were collected from cloud forest.

*Paratypes.* COLOMBIA: *Dept. Valle*. 21 km W of Cali, 20 March 1955, ♀ (E. I. Schlinger and E. S. Ross, CAS).

*Micrathena bifida* (Taczanowski)  
Figures 40–47; Map 2

*Acrosoma bifida* Taczanowski, 1879: 112, pl. 1, fig. 29. Female lectotype here designated and two female paralectotypes from Amable María [Junín, Prov. Tarma], Peru (PAN), examined.

*Micrathena bifida*:—Reimoser, 1917: 112. Roewer, 1942: 954. Bonnet, 1957: 2862.

*Description.* Female lectotype. Carapace, sternum, legs orange-brown. Carapace darker on sides. Dorsum of abdomen white with indistinct black marks and darker spines; venter black with paired white patches. Carapace with narrow rim, circular thoracic depression, and three dimples on each side; thorax high (Fig. 40). Abdomen trapezoidal with a pair of spines one third from anterior end and a double spine on each posterolateral corner (Fig. 41). Total length, 8.5 mm. Carapace, 2.7 mm long, 2.0 mm wide. First femur,

2.5 mm; patella and tibia, 2.7 mm; metatarsus, 1.7 mm; tarsus, 0.8 mm. Second patella and tibia, 2.3 mm; third, 1.5 mm. Fourth femur, 2.8 mm; patella and tibia, 2.4 mm; metatarsus, 1.8 mm; tarsus, 0.8 mm.

*Male.* Carapace orange, black on sides. Sternum, coxae orange. Legs blackish orange. Dorsum of abdomen orange with some black and some tiny white pigment spots; venter orange, black on sides and some black behind spinnerets. Carapace with thoracic depression and three pairs of dimples, posterior ones indistinct. First coxa with hook; groove on proximal end of second femur. Sides of abdomen almost parallel, undulating (Fig. 45). Total length, 5.8 mm. Carapace, 2.4 mm long, 1.5 mm wide. First femur, 1.9 mm; patella and tibia, 1.9 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 1.6 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.6 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

*Note.* Males and females have been matched by a collection of four females, three males and two juveniles from Utcuyacu, Peru.

*Diagnosis.* *Micrathena bifida* females differ from *M. atuncela* by the short, rounded lobe of the epigynum (Fig. 42). Males differ by the distinctive shape of the median apophysis and terminal apophysis (Fig. 46).

*Distribution.* Andes of Peru (Map 2).

*Records.* PERU: *Dept. Junín*. Utcuyacu, 1,600–2,200 m, March 1948, 4♀, 3♂ (F. Woytkowski, AMNH). *Ucayali*. Boquerón, Aug. 1946, ♀ (F. Woytkowski, AMNH).

*Micrathena rubicundula* (Keyserling)  
Figures 48–52; Map 2

*Acrosoma rubicundulum* Keyserling, 1863: 74, pl. 2, fig. 7. Female type from Santa Fé de Bogota, Neu Granada [Bogotá, Colombia] (BMNH), examined; 1892: 21, pl. 1, fig. 17, ♀.

*Micrathena rubicundula*:—Reimoser, 1917: 130. Roewer, 1942: 962. Bonnet, 1957: 2875. Chickerling, 1960c: 87, figs. 80–82, ♀.

*Micrathena lordotica* Mello-Leitão, 1941: 267, fig. 4,

♀. Female holotype from Bogotá, Colombia (MNRJ), lost. NEW SYNONYMY.

*Synonymy.* Mello-Leitão's figures of *M. lordotica* and the description best match *M. rubicundulum*. Both come from the same locality.

*Description.* Female. Carapace light orange, sides blackish; posterior darker orange. Sternum blackish orange. Legs dusky on orange. Dorsum of abdomen white with spines dark orange, sides black, and venter black with two paraxial white lines. Carapace with thoracic mark and very high thorax; without dimples (Fig. 48). Abdomen with three pairs of large spines (Fig. 49). Total length, 7.0 mm. Carapace, 2.6 mm long, 1.8 mm wide. First femur, 2.3 mm; patella and tibia, 2.6 mm; metatarsus, 1.6 mm; tarsus, 0.8 mm. Second patella and tibia, 2.2 mm; third, 1.4 mm. Fourth femur, 2.6 mm; patella and tibia, 2.2 mm; metatarsus, 1.6 mm; tarsus, 0.8 mm.

*Variation.* Females vary in total length from 7.0 to 7.3 mm.

*Note.* The male is not known.

*Diagnosis.* *Micrathena rubicundula* differs from the other species in this group having six spines and a scapelike structure in the epigynum (*atuncela*, *gurupi*, *teresopolis* and *nigrichelis*) by the shape of the scape: narrow, elongate, constricted proximally and without annuli (Figs. 50, 52).

*Distribution.* Colombia, Ecuador (Map 2).

*Records.* ECUADOR: *Prov. Tungurahua*. Baños, 220–2,500 m, April 1939, ♀ (W. C. McIntyre, MCZ).

### *Micrathena nigrichelis* Strand, new status Figures 53–60; Map 2

*Micrathena fissispina* var. *nigrichelis* Strand, 1908: 4. Female holotype from Joinville, Santa Catarina, Brazil (SMF), examined. Strand, 1915: 12. Roewer, 1942: 957. Bonnet, 1957: 2867.

*Micrathena henseli* Reimoser, 1917: 121, pl. 7, fig. 19, ♀. Two female syntypes from Pôrto Alegre, Serra Geral, S. Cruz [Rio Grande do Sul], Brazil (NMW), examined. Roewer, 1942: 959. Bonnet, 1957: 2870. Camargo, 1950a: 450, figs. 1, 2, ♀, ♂.

Chickering, 1960c: 79, figs. 52–57, ♀, ♂. NEW SYNONYMY.

*Synonymy.* Reimoser did not recognize Strand's description, which lacked illustrations, and thought his specimens belonged to a new species.

*Description.* Female. Carapace orange, thorax dusky on sides. Sternum with black pigment. Legs orange. Dorsum of abdomen orange-white, anterior half darker; sides with fine black pigment on orange; venter dusky on orange. Carapace with narrow rim, a median thoracic mark and three pairs of dimples, thorax low. First, second and fourth femora with short macrosetae. Abdomen with three pairs of spines and a minute spine below posteroventral spine (Figs. 53, 54). Abdomen soft and finely punctate. Total length, 8.0 mm. Carapace, 3.0 mm long, 2.3 mm wide. First femur, 3.5 mm; patella and tibia, 3.5 mm; metatarsus, 2.7 mm; tarsus, 0.9 mm. Second patella and tibia, 3.0 mm; third, 1.7 mm. Fourth femur, 4.3 mm; patella and tibia, 3.2 mm; metatarsus, 2.6 mm.

Male. Carapace orange-brown, dark on each side of thorax. Sternum blackish. First and second leg brown, third and fourth orange-gray. Dorsum of abdomen with some white marks on sides and black pigment patches; venter black. Carapace with three pairs of dimples, rims with minute teeth. First, second and fourth femora with short macrosetae. First coxa with hook, second femur with groove. Dorsum of abdomen covered with minute teeth and six small spines (Fig. 58). Total length, 5.3 mm. Carapace, 2.2 mm long, 1.4 mm wide. First femur, 2.2 mm; patella and tibia, 2.2 mm; metatarsus, 1.7 mm; tarsus, 0.6 mm. Second patella and tibia, 1.9 mm; third, 1.0 mm. Fourth femur, 2.4 mm; patella and tibia, 1.7 mm; metatarsus, 1.6 mm; tarsus, 0.6 mm.

*Variation.* Females vary in total length from 5.6 to 8.6 mm, males from 4.4 to 5.9 mm. Some males appear to mature after fewer instars than others. In females the tiny tooth below the third pairs of abdominal spines is often absent. Juveniles may

have three pairs of spines on the posterior end. Females from Teresópolis sympatric with *M. teresopolis* are small, with narrowed abdomen and have the two posterior spines on each side extended on a common stalk.

*Note.* Many collections have males and females together. The point of the median apophysis probably fits into the depression of the female's scape. The scape is not torn off when mating.

*Diagnosis.* The round scape of the epigynum (Figs. 55, 57) separates females of this species from all other *Micrathena*, including *M. teresopolis*. The bulging and projecting tegulum, the pointed median apophysis (Fig. 59), and six tiny spines on the abdomen (Fig. 58) separate the males from other species.

*Natural History.* Judging by the large number of individuals in collections, this species must be abundant wherever it occurs. It has been collected from forests, roadsides and shrubs.

*Distribution.* Southeastern Brazil to northern Argentina (Map 2).

*Records.* BRAZIL: *Est. Espírito Santo.* Santa Leopoldina (MZSP). *Rio de Janeiro.* Alto da Tijuca; Pico de Tijuca; Petrópolis; Niterói; Teresópolis; Nova Friburgo. *Minas Gerais.* Caxambú; Lavras. *São Paulo.* 33 km S of São Paulo; São Paulo; Alto da Serra; Pirassununga; Barueri; Salesópolis; São Bernardo; São Roque; Cantareira; Limeira; Botucatu; Mirassol; Guarulhos; Diadema; Jarinú; Monte Alegre; Rio Claro; Cosmópolis; Barueri; Eng. Marcilac. *Paraná.* Rolândia; Curitiba; Araucária; Rincão; Guarapuava. *Santa Catarina.* Blumenau. *Rio Grande do Sul.* Pôrto Alegre; Pelotas; São Leopoldo; Guaíba. URUGUAY: *Dept.*

*Treinta y Tres.* Río Olimar, 25 km W Treinta y Tres. *Dept. Lavaleja.* Sección 11a. *Maldonado.* Sierra de los Animas. PARAGUAY: *Dept. Paraguari.* Sapucaí. ARGENTINA: *Prov. Misiones.* Aguarai-Guazú; Punto Bemberg Pasarele. *Salta.* Cerro San Lorenzo; Santa María.

### *Micrathena teresopolis* new species Figures 61–65; Map 2

*Holotype.* Female with torn scape from Serra dos Orgãos, 1,000–8,000 m, Est. Rio de Janeiro, Brazil, 19 April 1965 (H. Levi, MZSP). The specific name is a noun in apposition after the type locality.

*Description.* Female. Carapace, coxae, legs orange. Chelicerae blackish. Labium, sternum and endites orange-brown. Dorsum of abdomen whitish with some gray marks on sides; sides, venter orange. Booklung covers and ring around spinnerets blackish. Carapace with a median thoracic depression; lighter rim and dimples indistinct. Abdomen with six large spines (Figs. 61, 62). Total length, 7.5 mm. Carapace, 2.6 mm long, 2.0 mm wide. First femur, 2.6 mm; patella and tibia, 2.6 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm. Second patella and tibia, 2.4 mm; third, 1.4 mm. Fourth femur, 2.9 mm; patella and tibia, 2.5 mm; metatarsus, 1.8 mm; tarsus, 0.8 mm.

*Variation.* Females vary in total length from 4.9 to 7.5 mm.

*Note.* Most paratypes have the tip of the scape torn off. The male is unknown.

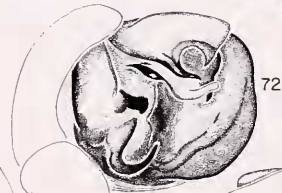
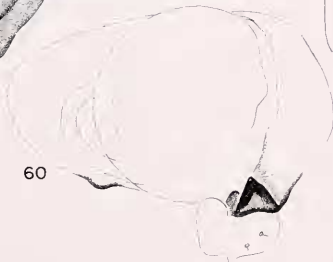
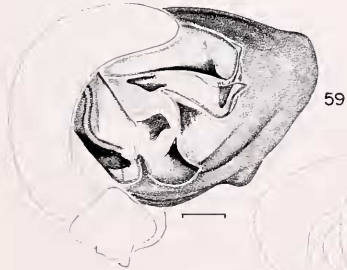
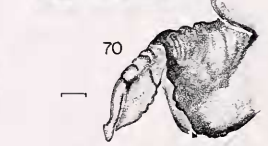
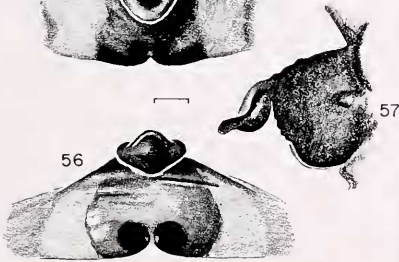
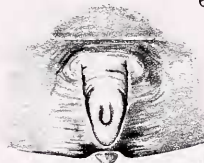
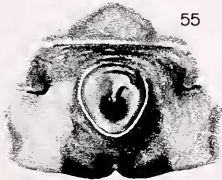
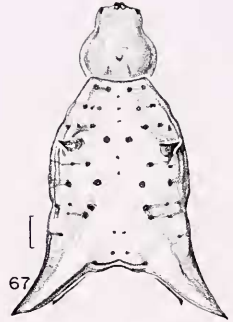
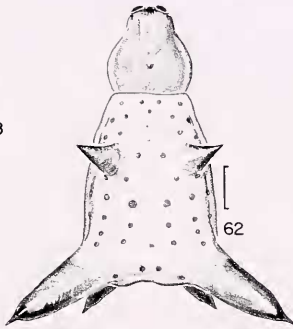
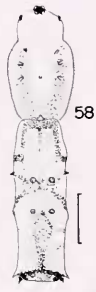
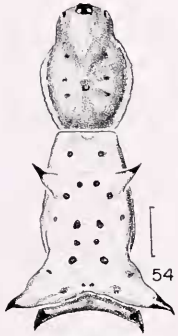
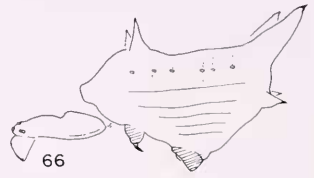
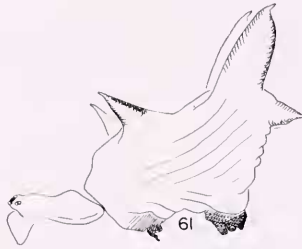
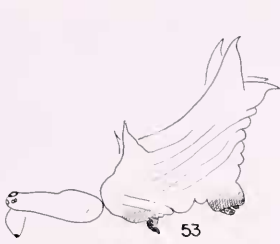
*Diagnosis.* Unlike females of *M. nigrichelis*, the scape of the epigynum is narrow with parallel sides (Fig. 63). The dimples and rim of the carapace are less distinct than those of *M. nigrichelis*, and

Figures 53–60. *Micrathena nigrichelis* Strand. 53–57. Female. 53. Lateral. 54. Dorsal. 55. Epigynum, ventral. 56. Epigynum, posterior. 57. Epigynum, lateral. 58–60. Male. 58. Dorsal. 59. Left palpus, mesal. 60. Palpus, lateral.

Figures 61–65. *Micrathena teresopolis* n. sp., female. 61. Lateral. 62. Dorsal. 63. Epigynum, ventral. 64. Epigynum, posterior. 65. Epigynum, lateral.

Figures 66–73. *Micrathena reali* n. sp. 66–70. Female. 66. Lateral. 67. Dorsal. 68. Epigynum, ventral. 69. Epigynum, posterior. 70. Epigynum, lateral. 71–73. Male. 71. Dorsal. 72. Palpus, mesal. 73. Palpus, lateral.

*Scale lines.* 0.1 mm, except Figures 53, 54, 58, 61, 62, 66, 67, 71, 1.0 mm.



the upper posterior spines are longer than the ventral ones (Figs. 61, 62).

*Natural History.* Specimens have been collected in forest.

*Distribution.* Brazil, Est. Rio de Janeiro to São Paulo (Map 2).

*Paratypes.* BRAZIL: *Est. Rio de Janeiro.* Teresópolis, 7–9 Nov. 1945, 2♀, imm. (H. Sick, AMNH); Parque Nacional Itatiaia, 1,200 m, 4 April 1964, ♀ (C. E. and E. S. Ross, CAS); Serra dos Orgãos, 1,000–1,800 m, 19 April 1965, 8♀ (H. Levi, MCZ). *São Paulo.* São José do Barreiro, S. Bocaina, 1960 m, Nov. 1968, ♀ (M. Alvarenga, AMNH).

*Micrathena reali* new species

Figures 66–73; Map 2

*Holotype.* Female from Itaimbézinho, Est. Rio Grande do Sul, Brazil, 29 Dec. 1963 (Mauro C. Real, No. 01827, FZRS). The species is named after its collector.

*Description.* Female. Carapace, legs orange. Sternum dark orange, darker than coxae. Dorsum of abdomen white with gray marks on sides. Venter gray, white posteriorly. Carapace with distinct thoracic depression, indistinct rim, no dimples. Posterior median eyes slightly larger than others, which are subequal. Abdomen with six soft spines; posterior lower spines smaller than uppers (Figs. 66, 67). Total length, 8.1 mm. Carapace, 3.0 mm long, 2.3 mm wide. First femur, 2.8 mm; patella and tibia, 3.0 mm; metatarsus, 2.1 mm; tarsus, 0.9 mm. Second patella and tibia, 2.7 mm; third, 1.7 mm. Fourth femur, 3.2 mm; patella and tibia, 2.7 mm; metatarsus, 1.9 mm; tarsus, 0.7 mm.

Male. Carapace orange, sides of thorax slightly darker. Labium, endites, sternum black. Coxae and legs orange. Dorsum of abdomen with white pigment (Fig. 71), venter black. Carapace with three indistinct pairs of dimples and a thoracic depression. Coxal hook small; groove on proximal end of second femur. Abdomen in poor physical condition. Total length, 4.1 mm. Carapace, 1.7 mm long, 1.2 mm wide. First femur, 1.4 mm; patella and

tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.8 mm. Fourth femur, 1.5 mm.

*Variation.* Females vary in total length from 6.7 to 8.1 mm. Of the seven specimens available, one had vague indication of dimples on the carapace and one had the scape torn off.

*Note.* The male comes from the same locality as females.

*Diagnosis.* This species differs from *M. nigrichelis* by lacking dimples on the carapace (Figs. 66, 67) and by having a narrow scape on the epigynum (Fig. 68). Unlike *M. teresopolis*, the scape has a neck and a dewlap (Figs. 68, 70). The male differs by having the median apophysis appear as a narrow hook in ventral view, and the terminal apophysis attached almost to the embolus tip (Fig. 72).

*Distribution.* Southeastern Brazil (Map 3).

*Paratypes.* BRAZIL: *Est. São Paulo.* Campos do Jordão, 15 Dec. 1944, March 1945, 3 Jan. 1948, 15 Dec. 1955, 22 Sept. 1961, 6♀ (nos. 4544, 4633, 8353, 8104, 6922, MZSP); March 1964, ♂ (F. Biasi, no. 3854, MZSP).

*Micrathena shealsi* Chickering

Figures 74–78; Map 2

*Micrathena shealsi* Chickering, 1960a: 8, figs. 13–17, ♀. Female holotype from Sunchal [? near Salta, Salta Prov.], Argentina (MCZ), examined.

*Description.* Female. Carapace orange with three dark brown longitudinal streaks, one through the middle and one on each side. Sternum, coxae light yellow; distal articles of legs orange. Dorsum of abdomen with white pigment in midline, blackish on sides; venter between epigynum and spinnerets yellow-white. Carapace with three pairs of dimples, a distinct thoracic depression and high thorax. The abdomen has six soft spines (Fig. 75). Total length, 8.2 mm. Carapace, 2.8 mm long, 2.0 mm wide. First femur, 2.9 mm; patella and tibia, 3.0 mm; metatarsus, 1.9 mm; tarsus, 0.9 mm. Second patella and tibia, 2.7 mm; third, 1.7 mm. Fourth fe-

mur, 3.3 mm; patella and tibia, 3.0 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm.

*Note.* It is uncertain whether the epigynum has had the scape torn off or lacks one altogether (Fig. 76). No other specimens similar to the type could be found in collections.

*Diagnosis.* This species was first thought to be *M. nigrichelis* with the scape of the epigynum torn off, but it differs by having a light sternum and a pigmentless median area on the venter of the abdomen.

#### *Micrathena gurupi* new species

Figures 79–83; Map 2

*Holotype.* Female from Canindé, Rio Gurupi, Est. Pará, Brazil, March–May 1964 (J. Carvalho, AMNH). The specific name is a noun in apposition after the type locality.

*Description.* Female. Carapace orange-brown, rim white. Sternum dark brown, coxae lighter. Legs grayish brown. Dorsum of abdomen yellow-white with black marks; sides and venter black with white patches. Carapace with distinct thoracic depression. Femora tuberculate. Abdomen with six spines (Figs. 79, 80). Total length, 10.8 mm. Carapace, 3.6 mm long, 3.2 mm wide. First femur, 4.5 mm; patella and tibia, 4.3 mm; metatarsus, 3.3 mm; tarsus, 1.2 mm. Second patella and tibia, 3.6 mm; third, 2.1 mm. Fourth femur, 5.2 mm; patella and tibia, 4.4 mm; metatarsus, 3.7 mm; tarsus, 1.2 mm.

*Variation.* Females vary in total length from 9.2 to 11.0 mm.

*Diagnosis.* This species is larger than *Micrathena rubicundula*. It has a white rim around the carapace, and the scape of the epigynum is diamond-shaped (Figs. 81, 83).

*Distribution.* Suriname, northern Brazil (Map 2).

*Paratypes.* SURINAME: Republiek, June 1963, ♀ (P. H. van Doesburg, AMNH); Paramaribo, Aug. 1962, ♀ (P. H. van Doesburg, AMNH). BRAZIL: Est. Pará. Canindé, Oct. 1964, 2♀, 2 imm. (B. Malkin, AMNH), Feb.–March 1964, 2♀, 2 imm. (J. Carvalho, AMNH).

#### *Micrathena bogota* new species

Figures 84–88; Map 2

*Holotype.* Female and juvenile paratype are paralectotypes of *A. elongatus* Keyserling from Bogotá, Colombia (BMNH). The specific name is a noun in apposition after the type locality.

*Description.* Female. Carapace with head yellow, sides of carapace orange. Chelicerae orange. Sternum, first coxae orange-brown with black pigment. Distal leg articles orange, first femur darkest, fourth lightest. Dorsum of abdomen with some paired black patches on white; sides with some indistinct dusky marks on posterior; venter with very distinct median black band having parallel sides, continuing into a black circle around spinnerets. Carapace with a distinct thoracic depression and a slight rim in dorsal view. Thorax relatively low. Posterior median eyes slightly larger than others, which are subequal. Abdomen longer than wide, with four pairs of spines (Figs. 84, 85). Total length, 7.5 mm. Carapace, 2.4 mm long, 1.9 mm wide. First femur, 2.2 mm; patella and tibia, 2.1 mm; metatarsus, 1.4 mm; tarsus, 0.8 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.5 mm; patella and tibia, 2.0 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm.

*Note.* The scape of the epigynum of the type is torn off (Fig. 86).

*Diagnosis.* This species differs from *M. pupa* and *M. agriliformis* by having only eight spines, and by the very different epigynum (Figs. 86–88), which allies *M. bogota* with *M. guerini* and *M. elongata*. *Micrathena bogota* differs from the similar *M. elongata* by having a seemingly wider scape (Fig. 86), and the base of the epigynum set off from the dorsum (Figs. 86, 88); in posterior view there is a distinct lobe on each side separated by the median piece (Fig. 87).

#### *Micrathena elongata* (Keyserling)

Figures 89–93; Map 2

*Acrosoma elongatum* Keyserling, 1863: 75, pl. 2, fig. 8, ♀. Female lectotype here designated from Santa

Fé de Bogota, New Granada [Bogotá, Colombia] (BMNH), examined. 1892: 22, pl. 1, fig. 19, ♀.

*Micrathena elongata*:—Reimoser, 1917: 97. Roewer, 1942: 957. Bonnet, 1957: 2866. Chickering, 1960c: 76, figs. 38–40, ♀.

*Types*. Paralectotypes belong to three different species: an immature *Wagneriana*, a female and two immature *M. pupa* (Simon), and a female and immature of *M. bogota* n. sp. Keyserling's description of a yellow sternum, high thorax and lateral grooves fits only the lectotype: eight spines excludes *M. pupa*. The other specimens may have been added to the vial at a later time.

*Description*. Female. Carapace orange, brown on sides of thorax. Sternum orange with white pigment spots. Legs orange-brown. Dorsum of abdomen white, glossy; posterior black. Sides blackish, venter black with indistinct white band on each side. Carapace with thoracic depression; thorax high, lateral rims indistinct in dorsal view. Sides of abdomen with rows of tiny sclerites but no grooves (Figs. 89, 90). Total length, 8.2 mm. Carapace, 2.2 mm long, 1.6 mm wide. First femur, 2.1 mm; patella and tibia, 2.2 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 2.0 mm; third, 1.2 mm. Fourth femur, 2.5 mm; patella and tibia, 2.2 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm.

*Diagnosis*. This species, like *M. bogota*, differs from *M. agriliformis* and *M. pupa* by having eight small spines (Figs. 89, 90). It differs from *M. bogota* by having the scape of the epigynum narrower; the base is not set off (Figs. 91, 93); in posterior view there appear to be two openings, one on each side of the median piece (Fig. 92).

### The *kirbyi* Group

Females of the *kirbyi* group are characterized by having an epigynum with a raised, T-shaped structure on the bulge: a transverse bar with a posteromedian lobe (Figs. 3–5). This may be modified into a transverse bar (Fig. 297) or into a triangular structure (Figs. 104, 112, 361, 378, 420). It is very similar in many species. Its profile is shaped like a bird's head (Figs. 5, 161, 180). The carapace has a distinct thoracic mark, a high thorax, and up to three pairs of dimples (Figs. 122, 123, 192, 193).

Males always have a hook on the first coxa, often on the distal posterior edge (Fig. 2), and a matching groove on the proximal end of the second femur, facing the hook (Fig. 1). Males associated with females of two species may lack hook and groove (*M. excavata*, *M. quadriserrata*). The hook is larger and more ventral on the coxae of *M. clypeata*. The palpus has a paramedian apophysis attached to the conductor, a rectangular median apophysis whose distal rim is sclerotized and bent over (Levi, 1978: fig. 40; Figs. 143, 155), and a terminal apophysis forming a flat, lightly sclerotized flap covering the embolus (Figs. 100, 108, 143, 155, 182).

The diagnostic features of species are the arrangement of the spines on the abdomen of the females and the genitalia of both sexes. Both the epigyna and palpi of many species are very similar, and only obscure details separate the species. In females the posterior view of the epigynum must be examined; in males, the conductor, embolus and terminal apophysis of the palpus. The paracymbium is quite similar

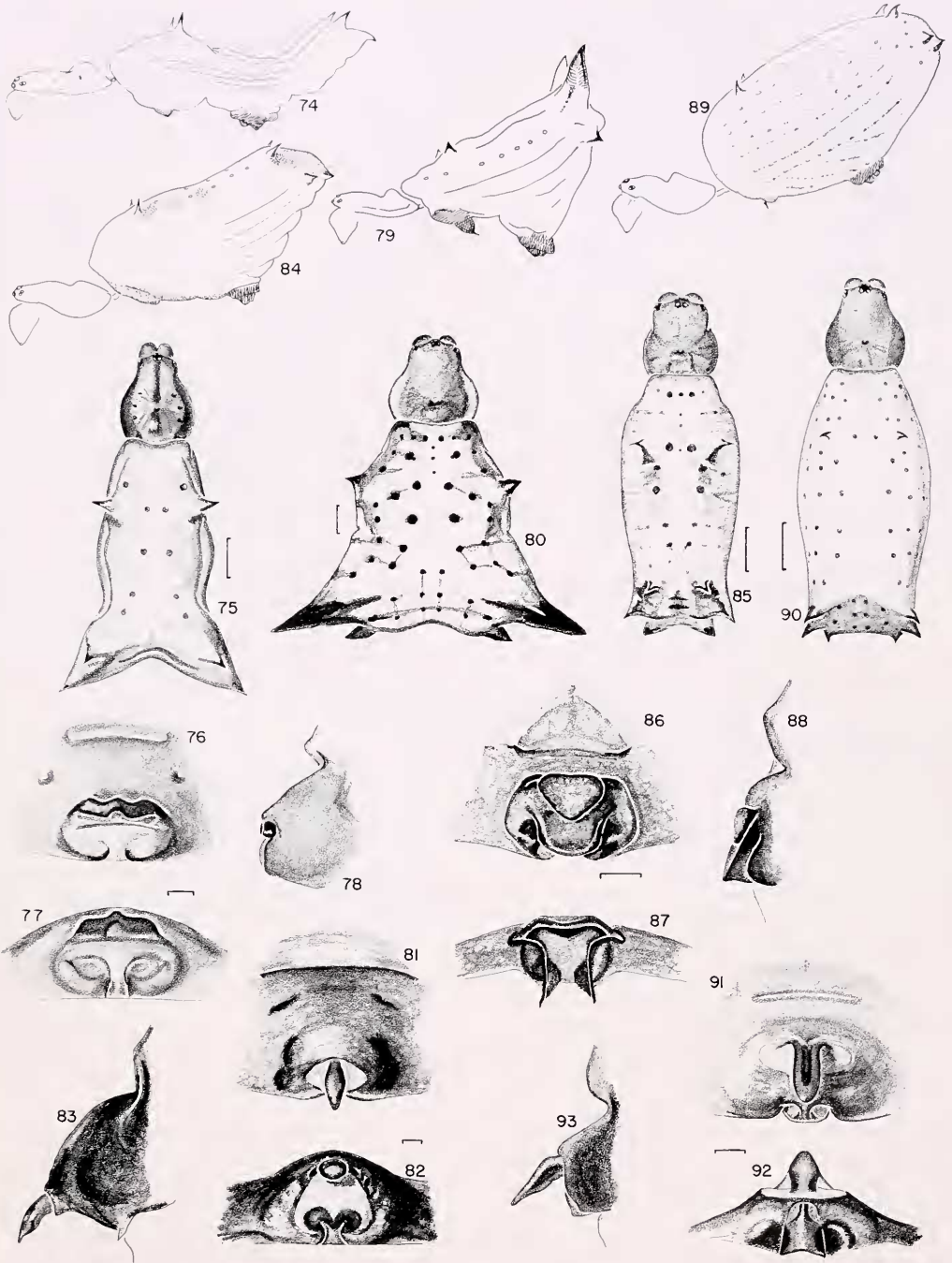
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Figures 74–78. *Micrathena shealsi* Chickering, female. 74. Lateral. 75. Dorsal. 76. Epigynum, ventral, scape torn off. 77. Epigynum, posterior. 78. Epigynum, lateral.

Figures 79–83. *Micrathena gurupi* n. sp., female. 79. Lateral. 80. Dorsal. 81. Epigynum, ventral. 82. Epigynum, posterior. 83. Epigynum, lateral.

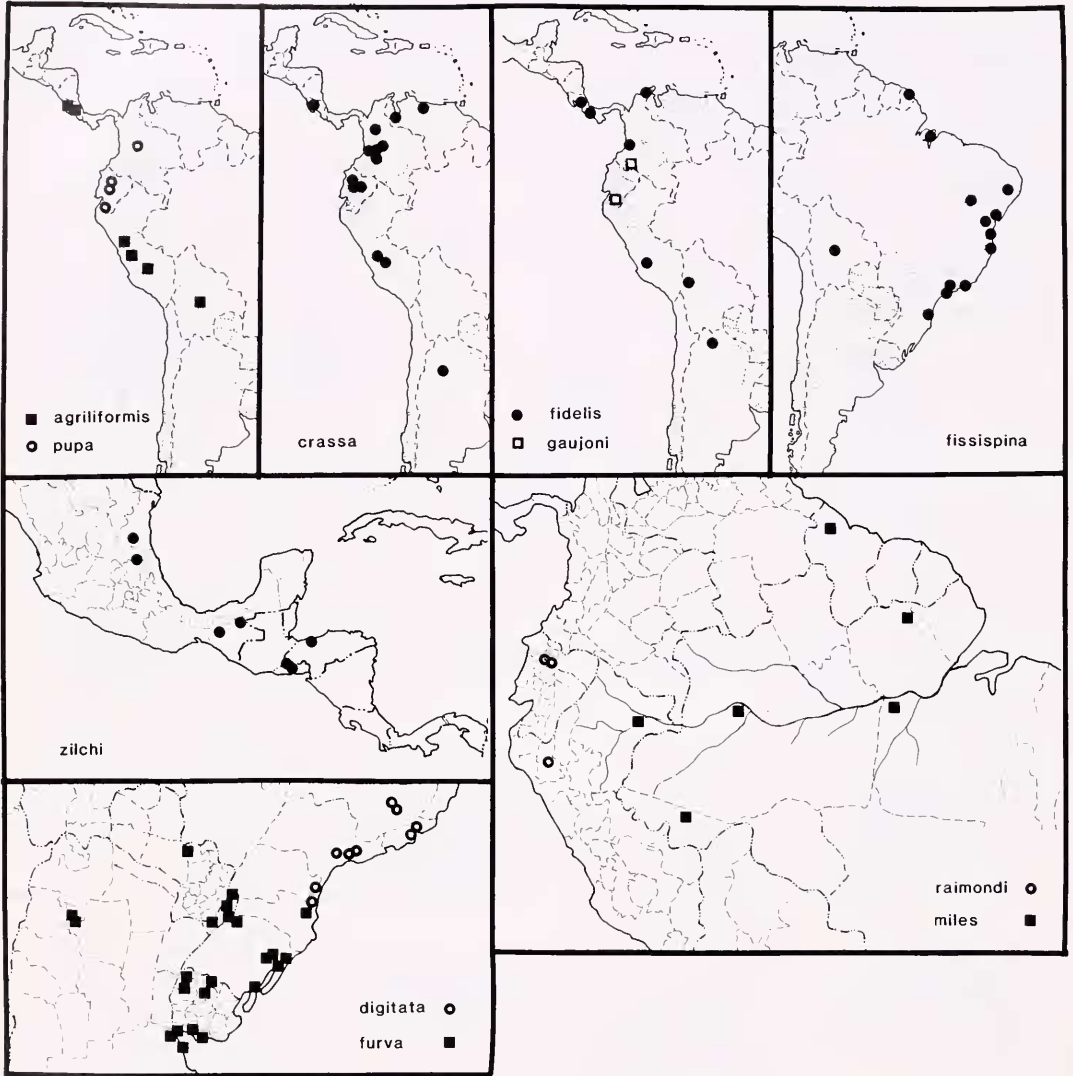
Figures 84–88. *Micrathena bogota* n. sp., female. 84. Lateral. 85. Dorsal. 86. Epigynum, ventral, scape torn off. 87. Epigynum, posterior. 88. Epigynum, lateral.





Figures 89-93. *Micrathena elongata* (Keyserling), female. 89. Lateral. 90. Dorsal. 91. Epigynum, ventral. 92. Epigynum, posterior. 93. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 74, 75, 79, 80, 84, 85, 89, 90, 1.0 mm.



Map 3. Distribution of *Micrathena* species of the *kirbyi* group.

in most species (Figs. 101, 109). The median apophysis is also similar in many species, but its rim and lobe (Figs. 6, 9) may be diagnostic.

This is the largest species group, containing 45 species out of a total of 104.

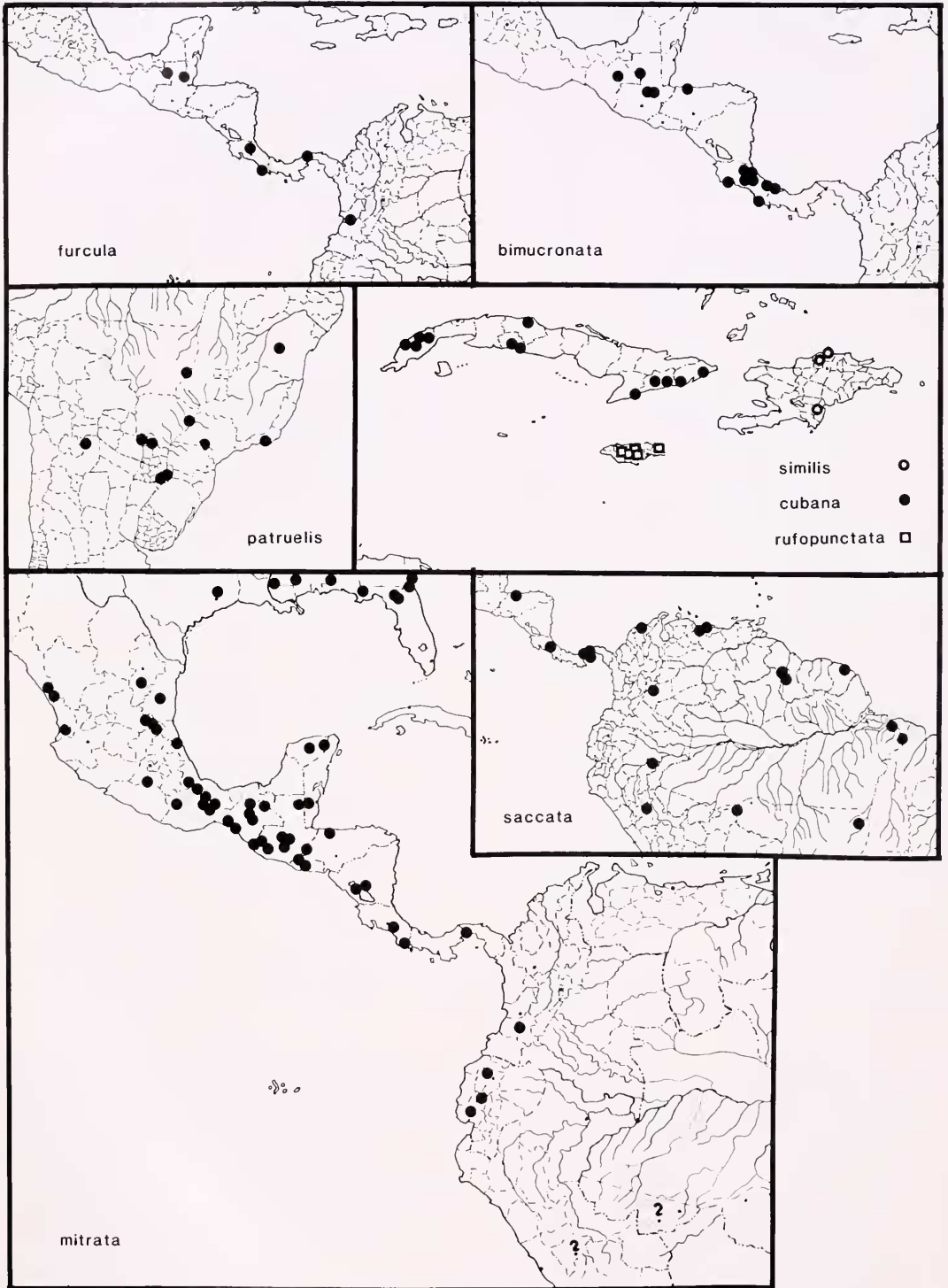
KEY TO THE *KIRBYI* GROUP

Females

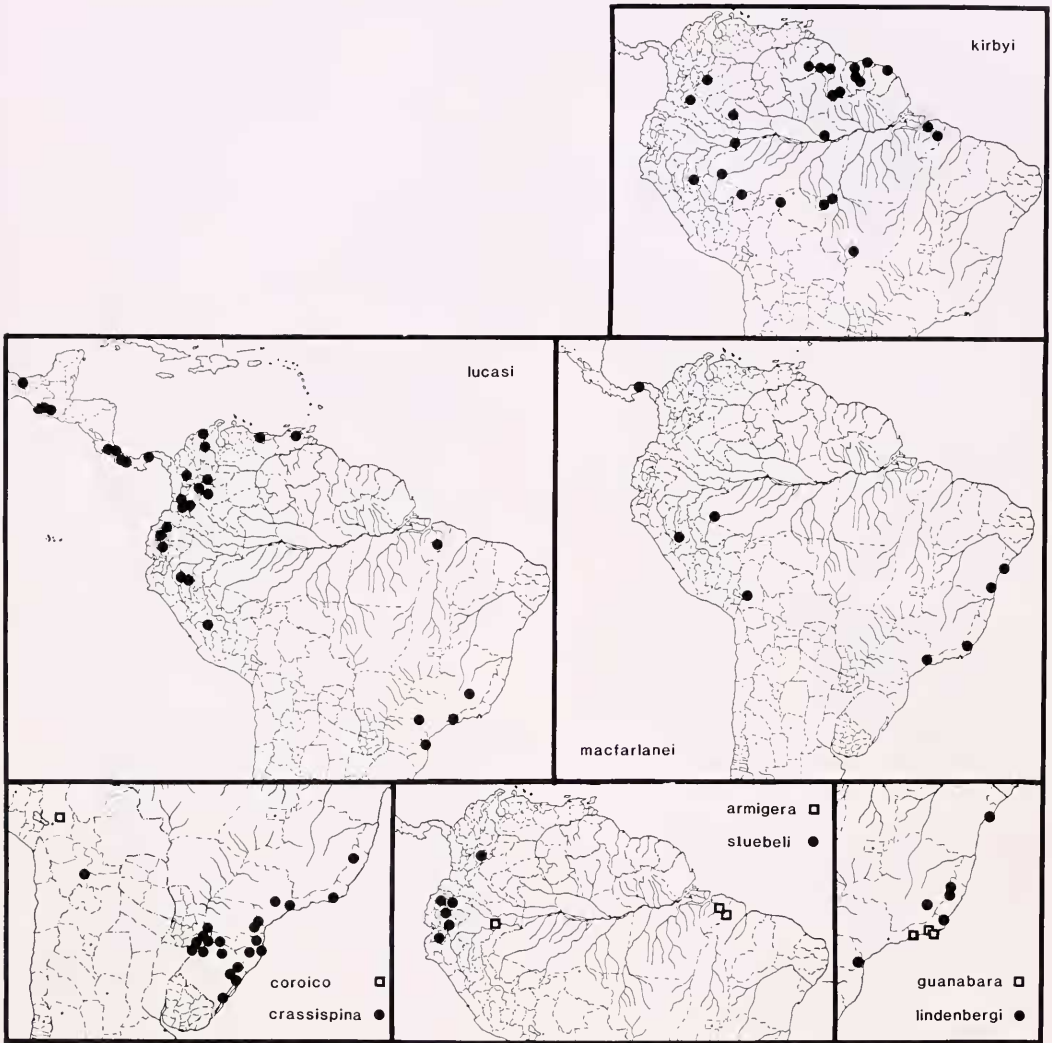
1. No sharp spines on anterior of abdomen overhanging carapace (Figs. 103, 110,

- 123) (at most blunt tubercles; Figs. 116, 177, 184, 193) ..... 2
- Spines on anterior of abdomen overhanging carapace (Figs. 231, 236, 243, 277) ..... 20
- 2(1) Abdomen with 2 to 4 spines (Figs. 170, 177, 184, 193, 208) ..... 3
- Abdomen with 6 or more spines or tubercles ..... 10
- 3(2) Abdomen biforked or with 2 posterior spines (Figs. 170, 177, 184) ..... 4
- Abdomen with 4 posterior spines (Figs. 193, 200, 208) ..... 6

- 4(3) Abdomen biforked; carapace hairy (Fig. 170); Central America perhaps to Mato Grosso, Map 4 ..... *furcula*  
 - Abdomen with two spines; carapace glabrous (Figs. 177, 184) ..... 5
- 5(4) Venter of abdomen with three pairs of red patches (Fig. 183); Jamaica, Map 4 ..... *rufopunctata*  
 - Venter of abdomen without light patches (Fig. 176); Central America, Map 4 ..... *bimucronata*
- 6(3) Upper spines longer than lower spines (Figs. 207, 208, 213, 214, 218, 219) ..... 7  
 - Upper and lower spines subequal in length (Figs. 192, 193, 199, 200, 225, 226) ..... 8
- 7(6) Dorsum of abdomen white with black pattern (Fig. 219); Cuba, Map 4 ..... *cubana*  
 - Dorsum of abdomen white to orange (Figs. 208, 214); Honduras to northern South America, Map 4 ..... *saccata*
- 8(6) Abdomen often with black pattern (Fig. 193); eastern North America to western South America, Map 4 ..... *mitrata*  
 - Dorsum of abdomen usually light, without pattern (Figs. 200, 226) ..... 9
- 9(8) Epigynum with Y-shaped bar and lobe (Fig. 227); Hispaniola, Map 4 ..... *similis*  
 - Epigynum with straight transverse bar and a wide lobe (Fig. 201); southeastern Brazil to northern Argentina, Map 4 ..... *patruelis*
- 10(2) Abdomen with 6 spines ..... 11  
 - Abdomen with 8 or more spines ..... 12
- 11(10) Epigynum framed on each side (Figs. 158, 159); Ecuador, Peru, Map 3 .....  
 - Epigynum not so framed, and with bar and lobe Y-shaped (Fig. 166); Amazon area, Map 3 ..... *raimondi*  
 - Epigynum not so framed, and with bar and lobe Y-shaped (Fig. 166); Amazon area, Map 3 ..... *miles*
- 12(10) Carapace with a deep transverse groove (Fig. 115); Central America, western South America to Argentina, Map 3 .....  
 - Carapace not so grooved (Figs. 102, 129, 144) ..... 13
- 13(12) Abdomen with 8 long, thin spines (Figs. 110, 111); Mexico to Honduras, Map 3 ..... *zilchi*  
 - Abdomen with spines short (Figs. 103, 130, 150) ..... 14
- 14(13) Abdomen length more than twice width, with 10 tiny spines (Figs. 95, 103) ..... 15  
 - Abdomen at most only slightly longer than wide, with spines larger (Figs. 123, 130, 137, 145, 150) ..... 16
- 15(14) Lobe of epigynum framed on each side by sclerotized cheeks (Fig. 104); Colombia, Ecuador, Map 3 ..... *pupa*  
 - Lobe of epigynum not so framed (Fig. 96); Costa Rica to Bolivia, Map 3 .....  
 - Dorsum of abdomen otherwise (Figs. 253, 267, 272, 284) ..... 27
- 16(14) Abdomen with one large spine on each side and 6 posteriorly (Figs. 145, 150) ..... 17  
 - Abdomen with no spines on sides, or with one or two small ones on each side ..... 18
- 17(16) Upper two posterior spines on a common stalk (Figs. 149, 150); eastern South America to Bolivia, Map 3 ..... *fissispina*  
 - Two lower posterior spines some distance from upper spines (Fig. 144); Colombia, Ecuador, Map 3 ..... *gaujoni*
- 18(16) Two spines posteriorly (Figs. 136, 137); Costa Rica to northern Argentina, Map 3 ..... *fidelis*  
 - Three spines posteriorly (Figs. 123, 129); southeastern South America ..... 19
- 19(18) Upper posterior spines with a lobe (Figs. 122, 123) ..... *digitata*  
 - Upper posterior spine not lobed (Figs. 129, 130) ..... *furva*
- 20(1) Abdomen with 6 spines (Figs. 230, 231); Bolivia, Map 5 ..... *coroico*  
 - Abdomen with 8 to 12 spines ..... 21
- 21(20) Abdomen with 8 spines (Figs. 235, 236, 242, 243, 406) (rarely with 10; *crassispina* with tiny 5th pair; *lucasi* with tiny 2nd pair) ..... 22  
 - Abdomen with 10 or 12 spines; third pair sometimes minute ..... 24
- 22(21) Epigynum with 2 light depressions on ventral face of semispherical bulge (Fig. 407); Chiapas, Map 6 ..... *lenca*  
 - Epigynum with usual transverse bar having a posterior median lobe (Figs. 237, 247) ..... 23
- 23(22) Third and fourth spines originating from joint base on each side (Figs. 242-246); lobe of epigynum light colored and without frame on each side (Fig. 247); Mexico to southeastern Brazil ..... *lucasi*  
 - Third and fourth spines well separated and facing opposite directions (Fig. 235); lobe of epigynum dark, with a semicircular frame on each side (Fig. 237); southeastern Brazil to Bolivia, Map 5 ..... *crassispina*
- 24(21) Abdomen wider than long; fourth pair of spines with a posterior lobe (Figs. 276, 277); Colombia to Peru, Map 5 .....  
 - Abdomen longer than wide or as wide as long; none of spines with lobe ..... 25
- 25(24) Abdomen with 10 spines (Figs. 253, 272, 419) ..... 26  
 - Abdomen with 12 or more spines (Figs. 313, 327, 370, 395) ..... 31
- 26(25) Dorsum of abdomen very flat; 10 thick spines around margin (Fig. 419); Panama, Colombia, Amazon area, Map 6 ..... *clypeata*  
 - Dorsum of abdomen otherwise (Figs. 253, 267, 272, 284) ..... 27



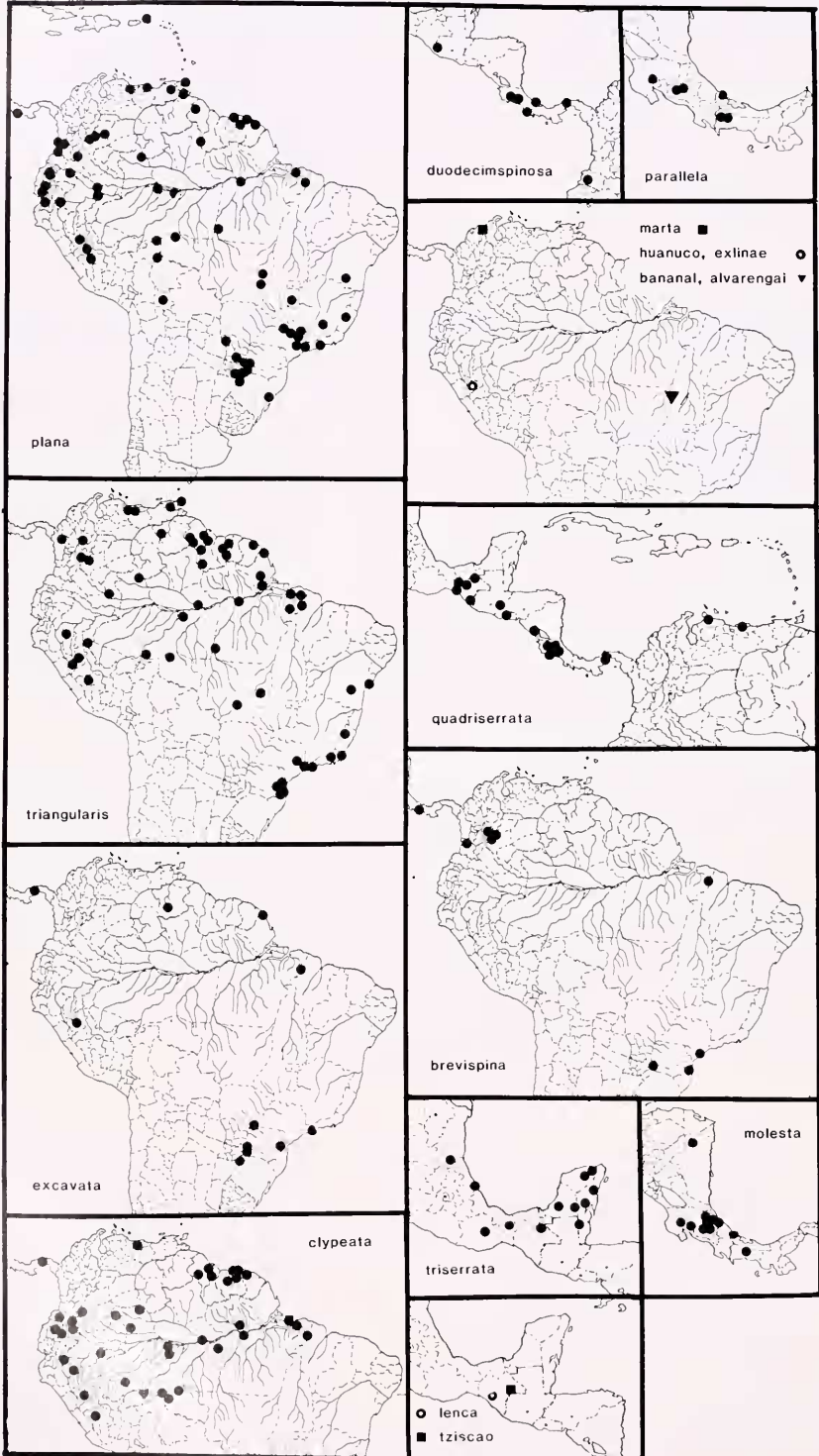
Map 4. Distribution of *Micrathena* species of the *kirbyi* group.



Map 5. Distribution of *Micrathena* species of the *kirbyi* group.

- 27(26) Three pairs of posterior spines; the two lower pairs some distance from upper (Figs. 271, 283); southeastern Brazil ..... 28  
 - Two pairs of posterior spines (Figs. 252, 261, 266) ..... 29
- 28(27) Abdomen narrow, slightly constricted between second and third pairs of spines (Fig. 272); transverse bar of epigynum not framed (Fig. 273); Map 5 ..... *lindenbergi*  
 - Abdomen wider, not constricted (Fig. 284); Map 5 ..... *guanabara*

- 29(27) Abdomen with black and white pattern as in Figures 266, 267; Guianas, Amazon, Map 5 ..... *kirbyi*  
 - Abdomen without such pattern ..... 30
- 30(29) Transverse bar of epigynum short, anterior lip curved posteriorly on each side, framing lobe (Fig. 254); posterior view of epigynum with central flat, light area (Fig. 256); Panama, Peru to southeastern Brazil, Map 5 ..... *macfarlanei*  
 - Transverse bar straight and long; anterior lip not curved into a lateral frame



- (Fig. 263); posterior view of epigynum with a narrow, dark, swollen area (Fig. 264); Amazon area, Map 5 ..... *armigera*
- 31(25) Posterodorsal spines on wings separated by a notch (Figs. 370, 377, 387) ..... 32
- Posterodorsal spines on corners of abdomen not separated by a distinct notch ..... 34
- 32(31) Notch shallow (Fig. 370); transverse bar of epigynum without median lobe, almost narrower in middle (Fig. 371); Chiapas to Venezuela, Map 6 ..... *quadrisserrata*
- Notch distinct (Figs. 377, 387); epigynum otherwise ..... 33
- 33(32) Epigynum a triangular knob, often torn, framed on each side (Fig. 378, 379); Mexico, Guatemala, Map 6 ..... *triserrata*
- Epigynum with short transverse bar (Fig. 388); Panama to Argentina, Map 6 ..... *brevispina*
- 34(31) Venter of abdomen with a soft spine on each side of spinnerets (Fig. 347); 2nd, 3rd, 4th, 6th spine pairs dark, 5th pair light (Fig. 348); Panama to Argentina, Map 6 ..... *excavata*
- No such ventral spines; all spines the same color ..... 35
- 35(34) Epigynum without transverse bar (Fig. 412), or bar forming a projecting lobe, usually torn off (Figs. 396-401); Chiapas to Panama ..... 36
- Epigynum with transverse bar having usually a posterior median lobe ..... 37
- 36(35) Epigynum a bulge with longitudinal grooves (Figs. 412-414); Chiapas, Map 6 ..... *tziscao*
- Epigynum with a median lobe (Figs. 396-398); usually torn off, leaving a transverse depression (Figs. 399-401); Nicaragua to Panama, Map 6 ..... *molesta*
- 37(35) Epigynum with subtriangular lobe, longer than wide (Fig. 361); abdomen with 14 spines (Figs. 359, 360); Goiás, Map 6 ..... *bananal*
- Epigynum otherwise ..... 38
- 38(37) Anterior edge of transverse bar of epigynum swollen, convex (Figs. 315, 316, 356) ..... 39
- Anterior edge of transverse bar concave or straight (Figs. 329, 330, 366) ..... 40
- 39(38) Abdomen with a lobe between 2nd and 3rd spines (rarely, a small tooth before 2nd pair of spines) (Figs. 313, 314); Panama, West Indies to northern Argentina, Map 6 ..... *plana*
- Abdomen otherwise (Fig. 355), Map 6 ..... *marta*
- 40(38) Abdomen with 18 spines, 5 of equal size on each side (Figs. 364, 365); Goiás, Map 6 ..... *albarengai*
- Abdomen with less than 18 spines or, if with 18, only four of equal size on each side ..... 41
- 41(40) Posterodorsal spine trifid (Figs. 290, 291, 326) ..... 42
- Posterodorsal spine bifid (Figs. 304, 337), or undivided (Fig. 342) ..... 43
- 42(41) Two spines on each side between anterior and trifid spine (Figs. 292-295); Guatemala to Colombia, Map 6 ..... *duodecimspinosa*
- Three or more spines of equal size on each side between anterior and trifid spine (Figs. 327, 328); Colombia to southeastern Brazil, Map 6 ..... *triangularis*
- 43(41) Epigynum in posterior view with a light lobe on each side of median plate (Fig. 307); Costa Rica, Panama, Map 6 ..... *parallela*
- Posterior view of epigynum otherwise (Figs. 340, 345); Peru ..... 44
- 44(43) Median plate of epigynum constricted ventrally in posterior view (Fig. 345); Map 6 ..... *extinae*
- Median plate of epigynum with parallel sides in posterior view (Fig. 340); Map 6 ..... *huanuco*

## Males

*Note.* The males for many species are unknown; for others the association with females is uncertain.

1. First coxa with hook on distal end (Fig. 2); second femur with proximal groove (Fig. 1) ..... 3
- First coxa without hook; second femur without groove ..... 2
- 2(1) Rim of median apophysis thorn-shaped (Fig. 353) ..... suspected male of *excavata*
- Rim with concave edge (Fig. 375); Chiapas to Venezuela, Map 6 ..... *quadrisserrata*
- 3(1) Rim of median apophysis bearing narrow prong pointing to base of median apophysis (Fig. 424); abdomen barely longer than wide (Fig. 423); Panama to Amazon area, Map 6 ..... *clypeata*
- Rim of median apophysis otherwise ..... 4
- 4(3) Lobe of median apophysis extended and

	projecting (Figs. 416, 417); Chiapas, Map 6 _____	<i>tziscao</i>	16(15)	Wide terminal apophysis S-curved and gently narrowing to tip (Fig. 325); Central America, West Indies to Argentina, Map 6 _____	<i>plana</i>
-	Lobe of median apophysis not extended _____		5		
5(4)	Abdomen with 6 spines (Fig. 58); southeastern Brazil to Argentina, Map 2 _____	<i>nigrichelis</i>		-	Narrow terminal apophysis, bent near base (Fig. 212); Honduras to Amazon area, Map 4 _____
-	Abdomen without spines _____		6	17(15)	Terminal apophysis with a round distal notch (Fig. 72); southeastern Brazil, Map 2 _____
6(5)	Rim of median apophysis wider than half its length (Figs. 121, 384, 403); species occurring in Mexico and Central America _____		7	-	Terminal apophysis without such distal notch _____
-	Rim of median apophysis not wider than half its length, or, if so, then species not occurring in Mexico or Central America _____		9	18(17)	Terminal apophysis widening distally and truncate; median apophysis rim forming a spine (Fig. 282); Colombia, Ecuador, Map 5 _____ suspected male of <i>stuebeli</i>
7(6)	Rim of median apophysis with notch on inside margin (Fig. 121); Costa Rica to northern Argentina, Map 3 _____			-	Terminal apophysis and median apophysis otherwise _____
-	Rim entire _____		8	19(18)	Terminal apophysis with an "upper" lobe above cymbium (Fig. 241, upper left); southeastern Brazil to Bolivia, Argentina, Map 5 _____
8(7)	Distal section of tegulum pointed (Fig. 403, upper right); upturned sclerotized hook at tip of embolus (Fig. 403); Nicaragua to Panama, Map 6 _____	<i>molesta</i>		-	Terminal apophysis without such a lobe _____
-	Distal section of tegulum rounded (Fig. 384); tip of embolus turned down (Fig. 384); Mexico to Guatemala, Map 6 _____	<i>triserrata</i>		20(19)	Tip of embolus extended beyond tip of terminal apophysis (Figs. 100, 108, 143, 224, 289) _____
9(7)	Rim of median apophysis extended into a finger (Fig. 46); Peru, Map 2 _____			-	Tip of embolus not showing _____
-	Rim otherwise _____		10	21(20)	Embolus tip biforked (Fig. 224); Cuba, Map 4 _____
10(9)	Embolus exposed (Figs. 16, 25, 38, 375) or covered by parallel, sclerotized terminal apophysis (Figs. 16, 375) _____		11	-	Embolus not forked _____
-	Embolus covered in part by transparent, flat terminal apophysis (Figs. 59, 100, 205); only short pieces of embolus exposed _____		14	22(21)	Embolus tip long and filiform (Fig. 108) _____ suspected male of <i>pupa</i>
11(10)	Embolus with a distal coil (Fig. 38); Colombia, Map 2 _____	<i>atuncela</i>		-	Embolus tip short (Figs. 100, 143, 289) _____
-	Embolus tip not coiled _____		12	23(22)	Embolus tip curved (Fig. 143) _____ suspected male of <i>fidelis</i>
12(11)	Embolus and surrounding area as in Figure 375; Chiapas to Venezuela, Map 6 _____	<i>quadrisserrata</i>		-	Embolus tip straight (Figs. 100, 289) _____
-	Embolus and surrounding area otherwise (Figs. 16, 25); South America _____		13	24(23)	Embolus filiform (Fig. 289); southeastern Brazil, Map 5 _____
13(12)	Embolus filiform, distally curved (Fig. 24); Ecuador, Map 2 _____	<i>pilaton</i>		-	Embolus thick (Fig. 100) _____ suspected male of <i>agrififormis</i>
-	Embolus heavy and straight (Fig. 16); Colombia, Map 2 _____	<i>guerini</i>		25(20)	Conductor showing as a triangular sclerite "below" tip of terminal apophysis (Fig. 336); Venezuela, Colombia to southeastern Brazil, Map 6 _____
14(10)	Radix with "upper" lobe (Fig. 303, on left, close to cymbium edge); Guatemala to Colombia, Map 6 _____	<i>duodecimspinosa</i>		-	Conductor otherwise _____
-	Radix with margin straight _____		15	26(25)	Terminal apophysis relatively small, distal half narrow (Figs. 128, 135); southeastern Brazil _____
15(14)	Embolus looping "above" terminal apophysis (Figs. 212, 325) _____		16	-	Terminal apophysis otherwise _____
-	Embolus with, at most, only tip exposed (Figs. 143, 163) _____		17	27(26)	Conductor its width distant from cymbium (Fig. 128); Map 3 _____
				-	Conductor one and a half times its width distant from cymbium (Fig. 135); Map 3 _____
				28(26)	Rim of median apophysis very large, a tiny notch on distal margin, and lobe almost absent (Fig. 121) _____ suspected male of <i>crassa</i>
				-	Median apophysis otherwise _____



- 29(28) Conductor visible as a drop-shaped structure; median apophysis with rim pointed (Fig. 155); eastern South America, Bolivia, Map 3 ..... *fissispina*  
 - Conductor and median apophysis otherwise ..... 30
- 30(29) Bulb wider than long, with tegulum pointed "above" (Fig. 310, upper right); Costa Rica, Panama, Map 6 .....  
 - Bulb shorter, with tegulum rounded "above" ..... 31
- 31(30) Terminal apophysis with "upper" border concave or with shallow notch ..... 32  
 - Terminal apophysis otherwise ..... 35
- 32(31) Terminal apophysis with three lobes (Fig. 182); Chiapas to Panama, Map 4 .....  
 - Terminal apophysis not so lobed ..... 33
- 33(32) Upper margin of terminal apophysis straight, with shallow distal notch (Fig. 175); Guatemala to Colombia, Map 4 .....  
 - Upper margin of terminal apophysis curved (Figs. 198, 205, 206) ..... 34
- 34(33) Truncate distal end of terminal apophysis turned "up" (Fig. 198); eastern U.S. to western South America, Map 4 .....  
 - Distal end of terminal apophysis pointing "down" (Figs. 205, 206); south-eastern Brazil to northern Argentina, Map 4 ..... 35
- 35(31) Terminal apophysis with distal point folded over (Fig. 163); rim of median apophysis with wide, shallow notch (Fig. 163); Ecuador, Peru, Map 3 .....  
 - Terminal apophysis otherwise; median apophysis without such notch ..... 36
- 36(35) Base of median apophysis sclerotized and sculptured (Figs. 259, 260, 289) ..... 37  
 - Base of median apophysis not sclerotized (Figs. 251, 393) ..... 38
- 37(36) Conductor holding tip of embolus in a shallow, curved dish (Fig. 289); south-eastern Brazil, Map 5 .....  
 - Conductor otherwise (Figs. 259, 260); Panama to southeastern Brazil, Map 5 ..... 39
- 38(36) Terminal apophysis with a sclerotized, pointed tip (Fig. 393); median apophysis square (Fig. 393); Panama to southeastern Brazil, Map 6 .....  
 - Terminal apophysis with truncate, overhanging appendage (Fig. 251); median apophysis longer than wide (Fig. 251); Mexico to southeastern Brazil, Map 5 ..... 40

*Micrathena agriliformis* (Taczanowski)  
 Figures 94–101; Map 3

*Acrosoma agriliformis* Taczanowski, 1879: 119, pl. 11, fig. 33, ♀. Female lectotype here designated from Paltaypampa, male paralectotype from Pumarca [both Dept. Junín, Prov. Tarma], Peru (PAN), examined.  
*Araneus agriliformis*:—Simon, 1895: 858. Bonnet, 1955: 425.

*Note.* Reimoser (1917) considered Taczanowski's description unrecognizable. It is only listed in Reimoser's index. Roewer does not list this species; Bonnet places it in *Araneus*.

*Description.* Female. Carapace brown, sides of thorax darker. Sternum dark brown. Legs brown, coxae and femora lightest, distal articles darker. Dorsum of abdomen all white with black patches (Fig. 95); sides black, venter black without marks. Thoracic depression circular. Abdomen much longer than wide, soft, with five pairs of tiny spines (Figs. 94, 95). Total length, 7.5 mm. Carapace, 2.0 mm long, 1.5 mm wide. First femur, 1.9 mm; patella and tibia, 1.9 mm; metatarsus, 1.2 mm; tarsus, 0.7 mm. Second patella and tibia, 1.7 mm; third, 1.1 mm. Fourth femur, 2.1 mm; patella and tibia, 1.7 mm; metatarsus, 1.0 mm; tarsus, 0.7 mm.

Male paralectotype. Carapace, sternum dark brown. Legs brown, coxae and femora lighter, distal articles dark. Dorsum of abdomen dark with very little white pigment; sides, venter black. First coxa with hook. First and second femur and tibia with macrosetae, the second more strongly armed. Abdomen longer than wide (Fig. 99). Total length, 4.5 mm. Carapace, 1.8 mm long, 1.3 mm wide. First femur, 1.5 mm; patella and tibia, 1.4 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.6 mm; patella and tibia, 1.3 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm.

*Note.* The original collection had males and females matched. A male from Peru was with a penultimate instar female. The many males and few females collected

make me uncertain of this species. Are some males those of *M. fidelis*?

*Diagnosis.* Females differ from *M. pupa* by the shape of the epigynum, having the transverse bar V-shaped (Fig. 96). The male differs from *M. pupa* by having a shorter embolus (Fig. 100), and from both *M. pupa* and *M. fidelis* by having the embolus pass under the middle of the terminal apophysis (Fig. 100) in mesal view. The sclerotized rim of the median apophysis is relatively smaller (Fig. 100).

*Distribution.* Costa Rica to Bolivia, in mountains (Map 3).

*Records.* COSTA RICA: *Prov. Puntarenas.* Bosque Nuboso, Monteverde, cloud forest, 1,580 m el., 22 July 1978, ♂, imm. (C. L. Craig, P. Klass, MCZ). *San José.* Pico Blanco, above Escazú, 2,000 m, March 1983, ♂ (W. Eberhard, MCZ). PERU: *Huánuco Dept.* Carpish Mts., 51 km NE of Huánuco, 28 Dec. 1954, juv. ♀, ♂ (E. I. Schlinger, E. S. Ross, CAS). *Cuzco.* above Machu Pichu, 2,600–2,800 m, 1–5 July 1964, ♂ (B. Malkin, AMNH). BOLIVIA: *Dept. Cochabamba.* Sihuenas, 2,200 m el., Los Yungas, 25 Sept. 1953, 6♀ (W. Forster, ZSM).

*Micrathena pupa* Simon  
Figures 102–109; Map 3

*Micrathena pupa* Simon, 1897b: 469. Twelve female, one male and juvenile syntypes from Loja, Ecuador (No. 10553, MNHN), examined and relabeled. Reimoser, 1917: 131. Roewer, 1942: 962. Bonnet, 1957: 2875.

*Note.* The left palpus of the male syntype is lost.

The illustrations were made from a female from Bogota, Colombia, a paralec-

totype of *Acrosoma elongata* Keyserling in the BMNH, and a male from Tungurahua, Ecuador. This male had the basal hematocha slightly expanded, but in the illustration the bulb and cymbium were placed in their unexpanded position.

*Description.* Female syntype. Carapace brown, light in head region, slightly darker on sides of thorax. Sternum dark brown. Coxae, legs light. Dorsum of abdomen soft, shiny white with gray and black streaks; sides with a longitudinal band from anterior to posterior dorsal spine; venter black between spinnerets and epigynum, gray below pedicel. Thoracic depression circular; lacking dimples and rim. Abdomen with ten small spines: one anterior pair in middle on sides and three posterior pairs (Figs. 102, 103). Total length, 7.3 mm. Carapace, 2.5 mm long, 1.8 mm wide. First femur, 1.8 mm; patella and tibia, 1.9 mm; metatarsus, 1.1 mm; tarsus, 0.7 mm. Second patella and tibia, 1.8 mm; third, 1.1 mm. Fourth femur, 2.2 mm; patella and tibia, 1.7 mm; metatarsus, 1.2 mm; tarsus, 0.7 mm.

Male syntype. Coloration like female. Thoracic depression distinct. First coxa with small hook, second femur with groove. Abdomen with sides parallel anteriorly, narrowing posteriorly, with a slight notch at the posterior end (Fig. 107). Total length, 4.5 mm. Carapace, 1.9 mm long, 1.7 mm wide. First femur, 1.5 mm; patella and tibia, 1.5 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm. Second patella and tibia, 1.3 mm; third, 0.7 mm. Fourth femur, 1.5 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length

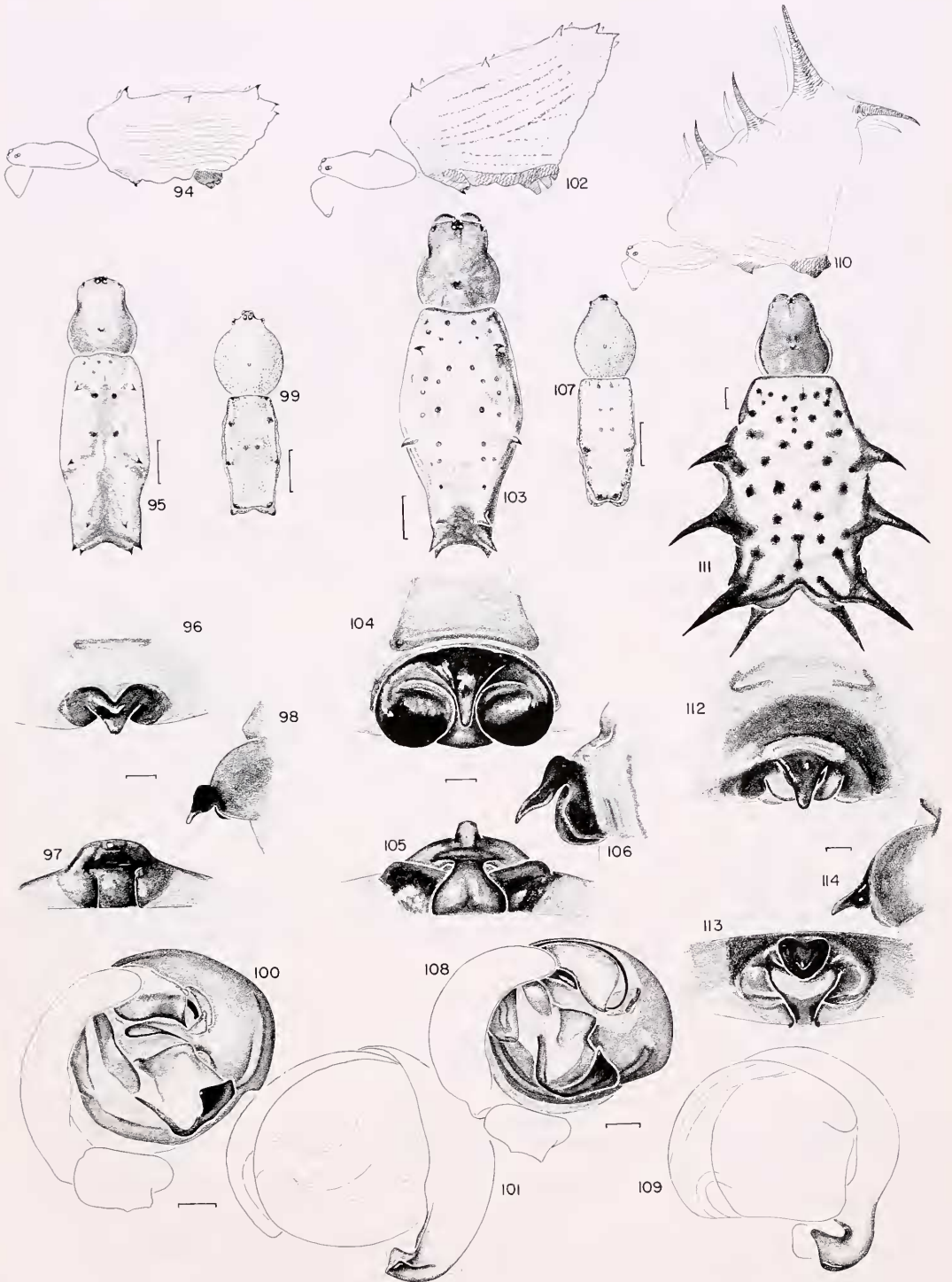
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Figures 94–101. *Micrathena agriliformis* (Taczanowski). 94–97. Female. 94. Lateral. 95. Dorsal. 96. Epigynum, ventral. 97. Epigynum, posterior. 98. Epigynum, lateral. 99–101. Male. 99. Dorsal. 100. Left palpus, mesal. 101. Palpus, lateral.

Figures 102–109. *Micrathena pupa* Simon. 102–106. Female. 102. Lateral. 103. Dorsal. 104. Epigynum, ventral. 105. Epigynum, posterior. 106. Epigynum, lateral. 107–109. Male. 107. Dorsal. 108. Palpus, mesal. 109. Palpus, lateral.

Figures 110–114. *Micrathena zilchi* Kraus, female. 110. Lateral. 111. Dorsal. 112. Epigynum, ventral. 113. Epigynum, posterior. 114. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 94, 95, 99, 102, 103, 107, 110, 111, 1.0 mm.



from 7.3 to 7.4 mm, males from 4.5 to 4.6 mm. The female from west of Quito has the lateral sclerotized areas of the epigynum straight rather than convex.

*Note.* Simon's original collection contained females with adult males. There is no reason to doubt the match.

*Diagnosis.* *Micrathena pupa* differs from the similar *M. agriliformis* by having the transverse bar of the epigynum straight, forming a triangle with the lobe (Fig. 104); *M. agriliformis* has it notched. Males have a thin threadlike embolus (Fig. 108), while *M. agriliformis* has a thick, only slightly curved embolus.

*Distribution.* Colombia to Ecuador, in mountains (Map 3).

*Records.* COLOMBIA: *Dept. Cundinamarca.* Bogotá, ♀ (Keyserling coll., BMNH). ECUADOR: *Tungurahua Prov.* Tungurahua, 2,600 m, 6 May 1939, 2♂ (W. Clarke-Macintyre, AMNH). *Pichincha.* 50 km W of Quito, 2,100 m, ♀ (L. Peña, MCZ).

### *Micrathena zilchi* Kraus

Figures 110–114; Map 3

*Micrathena zilchi* Kraus, 1955: 29, pl. 4, figs. 76–78, ♀. Female holotype, 17 female paratypes from Volcán Las Naranjos, 1,600 m, El Salvador (SMF), examined.

*Description.* Female paratype. Carapace dark brown, head lightest; rim white. Sternum blackish brown, legs black. Dorsum of abdomen yellow-white with black marks and black spines; sides with longitudinal black bands towards spinnerets and additional ones crossing; venter with paired white patches on black. Carapace with median thoracic mark and narrow

rim; no dimples. Abdomen with eight sharp sclerotized spines (Fig. 111). Total length, 12.6 mm. Carapace, 3.6 mm long, 3.6 mm wide. First femur, 5.1 mm; patella and tibia, 5.2 mm; metatarsus, 3.5 mm; tarsus, 1.3 mm. Second patella and tibia, 4.6 mm; third, 2.7 mm. Fourth femur, 5.4 mm; patella and tibia, 5.0 mm; metatarsus, 3.2 mm; tarsus, 1.2 mm.

*Variation.* Females vary in total length from 10.8 to 12.6 mm. While the triangular tip of the epigynum is alike in various specimens, the surrounding area is quite variable.

*Note.* The male is unknown. Immature females, probably pre-adult, have the same spines as the adult.

*Diagnosis.* *Micrathena zilchi* can be separated from others of this group by the dark triangular scape in the epigynum (Fig. 112) and by the eight sharp, long spines of the abdomen; the abdomen lacks spines on the anterior margin (Figs. 110, 111).

*Distribution.* Northeastern Mexico to El Salvador (Map 3).

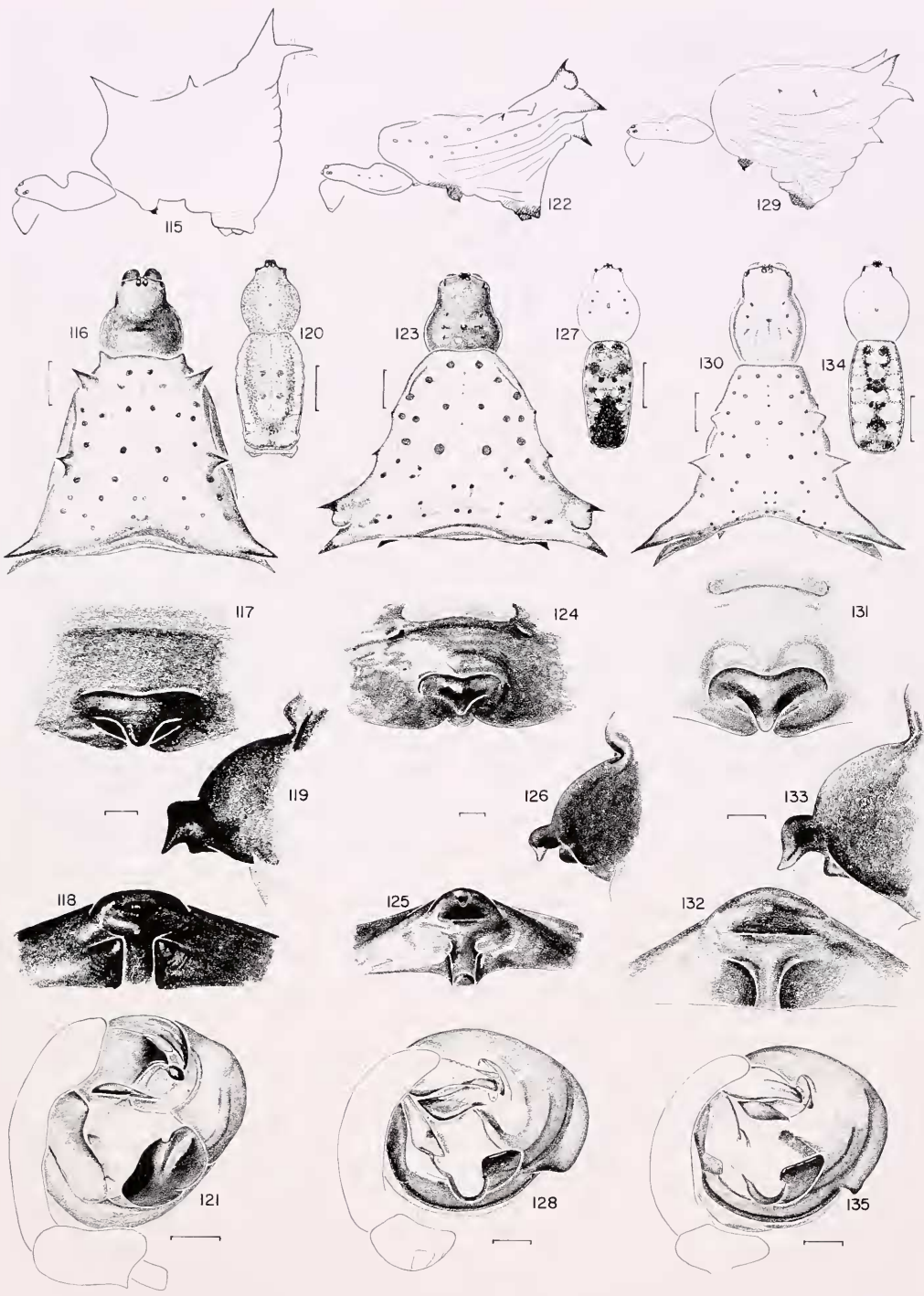
*Records.* MEXICO: *Est. Tamaulipas.* 25 km N Gomez Farias, Jan. 1972, ♀ (W. Russell, AMNH); 13 km NW of Gomez Farias, 1,400 m, 6–7 Oct. 1965, 4♀ (B. Whitehead, AMNH). *San Luis Potosí.* El Salto, 11 km NW of El Naranjo, Sept., Nov. 1964, 3♀ (D. Whitehead, MCZ). *Chiapas.* El Vergel, 800 m, 8 Oct. 1939, ♀ (C. Bolivar and D. Pelaez, AMNH); Palenque ruins, July 1983, ♀ (W. Maddison, R. S. Anderson, MCZ). EL SALVADOR: *Dept. Santa Ana.* Candelaria, 31 Aug. 1953, juv. (B. Malkin, AMNH). HONDURAS: mountain trail [? near Tela], 360 m, 22 July 1929, imm. (A. M. Chickering, MCZ).

Figures 115–121. *Micrathena crassa* (Keyserling). 115–119. Female. 115. Lateral. 116. Dorsal. 117. Epigynum, ventral. 118. Epigynum, posterior. 119. Epigynum, lateral. 120, 121. Male. 120. Dorsal. 121. Left palpus, mesal.

Figures 122–128. *Micrathena digitata* (C. L. Koch). 122–126. Female. 122. Lateral. 123. Dorsal. 124. Epigynum, ventral. 125. Epigynum, posterior. 126. Epigynum, lateral. 127, 128. Male. 127. Dorsal. 128. Palpus, mesal.

Figures 129–135. *Micrathena furva* (Keyserling). 129–133. Female. 129. Lateral. 130. Dorsal. 131. Epigynum, ventral. 132. Epigynum, posterior. 133. Epigynum, lateral. 134, 135. Male. 134. Dorsal. 135. Palpus, mesal.

Scale lines. 0.1 mm, except Figures 115, 116, 120, 122, 123, 127, 129, 130, 134, 1.0 mm.



*Micrathena crassa* (Keyserling)

Figures 115–121; Map 3

*Acrosoma crassum* Keyserling, 1863: 78, pl. 2, fig. 11, ♀. Female lectotype designated by Chickering, 1960, from Santa Fé de Bogota, Neu Granada [Bogotá, Colombia] (BMNH), examined; 1892: 19, pl. 1, fig. 15, ♀.

*Micrathena xanthopyga* Simon, 1895: 854, fig. 915, ♀. Immature lectotype and eight immature paralectotypes here designated from Venezuela (MNHN), examined. NEW SYNONYMY.

*Micrathena towarensis* Simon, 1897b: 468. Two female syntypes from Colonia Tovar [1,802 m, Aragua], Venezuela (MNHN), examined. NEW SYNONYMY.

*Micrathena aciculata* Simon, 1897b: 469. Four juvenile syntypes from Colonia Tovar [1,802 m, Aragua], Venezuela in the MNHN, examined. NEW SYNONYMY.

*Micrathena crassa*.—Reimoser, 1917: 110, pl. 6, fig. 14, ♀. Roewer, 1942: 956. Bonnet, 1957: 2864. Chickering, 1960c: 71, figs. 21–25, ♀; 1961: 402, figs. 21–25, ♀.

*Synonymy.* Simon types of *M. towarensis* are almost identical to Keyserling's specimens. The juveniles of *M. xanthopyga* and *M. aciculata* have the diagnostic deep groove across the carapace. The abdomen length of *M. aciculata* is 1.8 times the width, slightly wider behind than anteriorly, with eight spines. It comes from the same locality as *M. towarensis*.

*Description.* Female. Carapace, sternum, legs orange-brown. Dorsum of abdomen white with spines, sclerotized areas dark brown, sides and posterior of dorsum gray. Carapace with a deep transverse groove between head and thorax; without rim or dimples; both head and thorax high (Fig. 115). Abdomen sometimes with small lobes anteriorly above carapace and four pairs of dorsal spines (Fig. 116). Total length, 6.0 mm. Carapace, 2.3 mm long, 1.9 mm wide. First femur, 2.0 mm; patella and tibia, 2.2 mm; metatarsus, 1.3 mm; tarsus, 0.7 mm. Second patella and tibia, 2.0 mm; third, 1.3 mm. Fourth femur, 2.5 mm; patella and tibia, 2.1 mm; metatarsus, 1.5 mm; tarsus, 0.7 mm.

Male from Utcuyacu, Peru. Carapace dark olive brown, darker on sides. Sternum dark brown. Coxae and legs whitish.

Dorsum of abdomen with white pigment on sides, two gray longitudinal bands; sides whitish; venter black in middle; sides of black area with white pigment. Carapace with median thoracic depression; no rim or dimples (Fig. 120). First coxa with hook; second femur with groove. Total length, 4.4 mm. Carapace, 1.8 mm long, 1.3 mm wide. First femur, 1.4 mm; patella and tibia, 1.3 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm; third, 0.6 mm. Fourth femur, 1.5 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 5.0 to 7.7 mm. The groove across the carapace is of variable depth. The anterolateral corners of the abdomen may form a blunt tooth.

*Note.* A single male has been collected with females at Utcuyacu, Peru. I am uncertain whether they belong together.

*Diagnosis.* This eight-spined species can be separated from others of the *kirbyi* group by the deep groove between the high head and high thorax (Fig. 115). The squared abdomen has the last two spines on a joined socket, the second pair smallest, in the middle of the side (Fig. 116).

*Natural History.* This is a montane forest species which has been collected in cloud forest at Monteverde, Costa Rica.

*Distribution.* Costa Rica to Argentina (Map 3).

*Records.* COSTA RICA: *Prov. Puntarenas.* Monteverde, 1,600 m, 19 July 1978, ♀ (C. L. Craig, P. Klass, MCZ), 1,525 m, 26 Nov. 1977, ♀ (C. L. Craig, MCZ), 1,600 m, 12 Nov. 1977, ♀ (C. L. Craig, MCZ). VENEZUELA: *Est. Mérida.* Mérida, June 1975, ♀ (MACN). COLOMBIA: "Río Negro," ♀ (NMW). *Dept. Cundinamarca.* Bogotá, ♀ (MCZ); Montereondo, 1,200–2,000 m, 2♀ (MCZ). *Valle.* nr. Solidato, 1,600 m, 1,800 m, ♀ (MCZ); nr. Atuncela, 1,800 m, ♀ (MCZ). *Tolima.* 22 km W Fresno, ♀ (CAS). *Huila.* 12 km E of Sta. Leticia, 2,300 m, ♀ (MCZ). *Antioquia.* Medellín Valley, ♀ (MCZ). ECUADOR: *Prov. Pichincha.* Río Pilatón, ♀ (MCZ). *Tungu-*

*rahua*. Baños, ♀ (EPC); Río Topo, ♀ (EPC). *Pastaza*. Abitagua Mts., 1,200 m, 2♀ (AMNH). PERU: *Dept. Junín*. Utcuyacu, 1,600–2,200 m, 3♀, ♂ (AMNH, EPC). *Cuzco*. Chanchosmayo Basin, 2,150 m, ♀ (EPC). ARGENTINA: *Prov. Tucumán*. Pueblo Viejo, 19 Nov. 1959, 3♀ (Nuñez, MACN).

*Micrathena digitata* (C. L. Koch)

Figures 122–128; Map 3

*Acrosoma digitatum* C. L. Koch, 1839: 128, pl. 523, ♀. Female from Brazil (ZSM), destroyed.

*Plectana bullata* Walckenaer, 1841: 191. Female from Cayenne, French Guiana, lost. NEW SYNONYMY.

?*Plectana asciata* Walckenaer, 1841: 194. Female from Brazil, lost. NEW SYNONYMY.

*Micrathena digitata*:—Reimoser, 1917: 119, pl. 7, fig. 18, ♀. Roewer, 1942: 957. Bonnet, 1957: 2866. Chickering, 1960c: 75, figs. 33–37, ♀.

*Micrathena hyatti* Chickering, 1960c: 80, figs. 58–62, ♀. Female holotype from Joinville, Est. Santa Catarina, Brazil (BMNH), examined. NEW SYNONYMY.

*Synonymy*. Walckenaer described the lobed spines of *Plectana bullata*, otherwise present in very few species, and ten spines, but then indicated that the species has only eight spines. The locality, Cayenne, is an error. *Plectana asciata* has a hatchet-shaped spine and is probably this species. *Micrathena hyatti* is a female with a shrivelled, leathery abdomen.

*Description*. Female. Carapace, sternum dark brown. Legs brown. Dorsum of abdomen yellow-white with brown spines; venter dark brown. Carapace with three pairs of dimples, a median thoracic depression, high thorax, and indistinct rim in dorsal view. Abdomen rounded in front, with two small spines on each side, the anterior smaller; large posterolateral double spines on each side, the anterior of which is lobed behind; and a large pair of spines below (Figs. 122, 123). Total length, 7.0 mm. Carapace, 2.8 mm long, 2.6 mm wide. First femur, 2.3 mm; patella and tibia, 2.4 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 2.3 mm; third, 1.3 mm. Fourth femur, 2.6 mm; pa-

tella and tibia, 2.2 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

Male. Carapace dark orange-brown, blackish on sides. Sternum blackish brown. Coxae dark orange; more distal leg articles dark brown. Dorsum of abdomen with paired white spots, black and brown patches; venter black. Carapace with three pairs of dimples and a distinct thoracic depression (Fig. 127). First coxa with hook; second femur with proximal groove. Total length, 3.8 mm. Carapace, 1.8 mm long, 1.4 mm wide. First femur, 1.3 mm; patella and tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 1.0 mm; tarsus, 0.4 mm.

*Variation*. Females vary in total length from 5.2 to 8.0 mm. The first pair of spines (on the side) may be very small or absent. Southern specimens seem to have a smaller lobe. Females may grade into *M. furva* in the south. Males of *M. digitata* have the abdomen slightly narrower behind than in front but are otherwise like those of *M. furva*.

*Note*. The male is matched to the female because it is the most common male *Micrathena* in the Rio de Janeiro area and is also similar to the male of *M. furva*.

*Diagnosis*. Females differ from those of *M. furva* by having a lobe or swelling on the posterodorsal spine (Figs. 122, 123), absent in *M. furva*. It is possible that these are northern specimens of *M. furva*. The male has a palpus like that of *M. furva* (Fig. 128). The only other species with a lobed spine, *M. stuebeli*, has a wider abdomen and anterior spines.

*Natural History*. *Micrathena digitata* is found in forested areas, very common in the vicinity of Rio de Janeiro.

*Distribution*. Southeastern Brazil (Map 3).

*Records*. BRAZIL: *Est. Pará*. Belém, July 1971, ♀ (T. McGrath, MCZ, ?error in locality). *Rio de Janeiro*. Rio de Janeiro and Tijuca Mts., very common ♀, ♂ (AMNH, FZRS, MCZ, NRS, ZMB); Nova

Friburgo, 4♀ (ZMSP); Teresópolis, Feb. 1963, ♀ (IBSP); Niterói, ♀ (MNRJ). *Minas Gerais*. Belo Horizonte, Nov. 1919, ♀ (Cornell Univ. Exped., CUC); Ouro Preto, April 1954, ♀ (N. L. H. Krauss, AMNH). *São Paulo*. Boracéia, 3♀ (MZSP); Pilar do Sul, ♀ (MZSP). *Paraná*. Curitiba, ♀ (MNRJ, MZSP). *Santa Catarina*. Joinville, 5♀ (MNRJ).

*Micrathena furva* (Keyserling)

Figures 129–135; Map 3

*Acrosoma furvum* Keyserling, 1892: 7, pl. 1, fig. 4, ♂. Male holotype from Taquara, Rio Grande do Sul, Brazil (BMNH), examined.

*Micrathena tucumana* Simon, 1897a: 7. Female holotype from San Pablo, Tucumán, Argentina (MIZT), examined. Reimoser, 1917: 122. Roewer, 1942: 965. Bonnet, 1957: 2881. NEW SYNONYMY.

*Micrathena pffanli* Reimoser, 1917: 111, pl. 5, fig. 13, ♀. Female holotype from Territory Foncière [near Puerto Foncière, Concepción, 20 km N of Puerto Pinasco], Paraguay (NMW), examined. Roewer, 1942: 961. Bonnet, 1957: 2874. NEW SYNONYMY.

*Micrathena furva*:—Reimoser, 1917: 154. Roewer, 1942: 958. Bonnet, 1957: 2868. Chickering, 1960c: 78, figs. 46–49, ♂.

*Synonymy*. *Micrathena tucumana* is the female of *A. furvum*. Simon did not illustrate *M. tucumana*, thus Reimoser did not recognize it when he described the female again as *M. pffanli*.

*Description*. Female. Carapace light orange. Sternum dark orange. Legs orange. Dorsum of abdomen orange-white with sclerotized areas orange. Carapace with high thorax and narrow rim, three pairs of dimples and a median thoracic mark. Abdomen soft with eight to ten spines: none anteriorly, one or two lateral pairs, a pair of posterolateral double spines, and a pair of spines below (Figs. 129, 130). Total length, 6.7 mm. Carapace, 2.4 mm long, 1.9 mm wide. First femur, 2.2 mm; patella and tibia, 2.3 mm; metatarsus, 1.4 mm; tarsus, 0.8 mm. Second patella and tibia, 1.9 mm; third, 1.3 mm. Fourth femur, 2.4 mm; patella and tibia, 2.2 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

Male. Carapace dark orange. Sternum

dark brown. Coxae light orange, more distal leg articles light orange. Dorsum of abdomen with black and white pattern (Fig. 134); venter black. Carapace with three indistinct pairs of dimples and a very distinct thoracic depression. First coxa with distal hook, second femur with proximal groove. Abdomen almost rectangular, truncate anteriorly, rounded behind (Fig. 134). Total length, 4.2 mm. Carapace, 1.9 mm long, 1.4 mm wide. First femur, 1.5 mm; patella and tibia, 1.5 mm; metatarsus, 1.0 mm. Second patella and tibia, 1.3 mm; third, 0.8 mm. Fourth femur, 1.7 mm; patella and tibia, 1.2 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm.

*Variation*. Females vary in total length from 5.3 to 7.6 mm, males from 3.8 to 4.4 mm. In females the first pair of lateral spines may be absent or present as soft humps. One female lacked the last, the posterior pair. In males, the terminal apophysis and the folded conductor behind the tip of the embolus are longer in specimens from the northern part of the range.

*Note*. Several collections contain both males and females.

*Diagnosis*. *Micrathena furva* females differ from *M. digitata* only in lacking the lobe on the posterodorsal spine (Fig. 130). Perhaps *M. furva* are only southern specimens of *M. digitata*.

The male palp (Fig. 135) is most similar to that of *M. digitata*. Very few males were available; the only discernible difference from *digitata* is that the abdomen of *M. furva* male is as wide behind as anteriorly, while that of *digitata* is slightly narrower behind. I suspect that *M. furva* is the same species as *M. digitata*.

*Distribution*. Southern Brazil to Argentina (Map 3).

*Records*. BRAZIL: *Est. Santa Catarina*. Pinal, ♀ (AMNH); Blumenau, 2♀ (NMW). *Rio Grande do Sul*. São Francisco de Paula, 3♀, ♂ (FZRS); Vila Oliva [Caxias do Sul], 7♀ (FZRS); Canela, 5♀, ♂ (FZRS); Montenegro, ♂ (FZRS); Sierra Granada, ♀ (MNRJ); Iraí, ♂ (FZRS); Pôrto Alegre, ♀



(IBSP, MNRJ); Pelotas (MCZ). URUGUAY: *Dept. San José*. Playa Pascuae, ♀ (MHNM); Arazati, ♀ (MHNM). *Tacuarembó*. Arroyo Laureles, ♀ (MHNM). *Artigas*. Arroyo de la Invernada, 3♀ (MHNM); Arroyo Tres Cruces, 2♀ (MHNM). *Colonia*. Arroyo Sarandi, 10♀ (MHNM). *Canelones*. Isla Buchental, ♀ (MHNM). *Rivera*. Minas de Corrales, ♀ (MHNM). *Minas*. Quebrada de los Cuervos, ♀ (MHNM). *Salto*. Río Arapey, ♀ (MHNM). ARGENTINA: *Misiones Prov.* Eldorado, ♀, ♂ (AMNH); Santa Ana, ♀, ♂ (MACN); Punto 17 de Octubre, 3♀ (MACN); Parque Nacional Iguazú, 2♀ (MEG); Santa María, 15♀, 2♂ (MACN). Monteagudo, 65♀, 6♂ (MACN). *Tucumán*. Cadillal, ♀ (IMLT). *Buenos Aires*. Tigre, ♀ (MACN); Paraná de los Palmas, ♀♀ (MACN, MEG); Punta Lara, ♀ (MULP, MACN); Isla Martín García 2♀ (MEG), 5♀ (MACN).

*Micrathena fidelis* (Banks)  
 Figures 136–143; Map 3

*Acrosoma fidelis* Banks, 1909a: 212. Female holotype from Tablazo [Cerro Tablazo], Costa Rica (MCZ), examined.

*Micrathena cala* Chamberlin, 1916: 261, pl. 20, fig. 6, juv. Immature female from San Miguel, 6,000 ft. [2,000 m], Ayacucho, Peru (MCZ), examined. NEW SYNONYMY.

*Micrathena fidelis*:—Reimoser, 1917. Chickering, 1961: 411; 46–49, ♀. Roewer, 1942: 954. Bonnet, 1957: 2867.

**Synonymy.** The immature type of *M. cala* (Fig. 141) has the same number and shape of abdominal spines and has the diagnostic black area between the posterior spines. Also, it was found in the mountains, like other specimens of *M. fidelis*.

**Description.** Female holotype. Carapace orange-brown. Sternum orange. Legs orange-brown. Dorsum of abdomen white, posterior black between third and fourth pair of spines; sides black with several square white patches dorsally (Fig. 136); venter black with one white patch on each side of genital area and two white spots on each side of spinnerets. Carapace large

with narrow rim, distinct thoracic mark, but no dimples; thorax low (Fig. 136). Abdomen trapezoidal, widest behind, with eight spines; spines soft with black tips (Figs. 136, 137). Total length, 6.1 mm. Carapace, 2.3 mm long, 1.9 mm wide. First femur, 2.3 mm; patella and tibia, 2.3 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 2.2 mm; third, 1.3 mm. Fourth femur, 2.4 mm; patella and tibia, 2.2 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm.

**Male.** Carapace yellow-brown, darker on sides. Sternum black, coxae yellow. Legs yellow, distally darker. Dorsum of abdomen maculated black and white; venter black, with a white spot on posterior end. Carapace without dimples, thoracic depression distinct (Fig. 142). Coxal hook present. Total length, 4.8 mm. Carapace, 2.0 mm long, 1.4 mm wide. First femur, 1.6 mm; patella and tibia, 1.5 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.6 mm; patella and tibia, 1.3 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

**Variation.** Females vary in total length from 4.8 to 6.4 mm. The coloration of some South American specimens is variable.

**Note.** A male has been collected with a female at Saladito, Colombia.

**Diagnosis.** *Micrathena fidelis* can be separated from *M. agriliformis* by body proportions and spines, and by the epigynum having a straight transverse bar with lobe (Fig. 138). In posterior view there are two transverse lips (Fig. 139).

The male differs from *M. pupa* by having a shorter embolus (Fig. 143). It differs from *M. agriliformis* by the arched embolus passing below the distal edge of the semitransparent terminal apophysis. The sclerotized rim of the median apophysis is relatively larger than that of *M. agriliformis* (Fig. 143).

**Distribution.** Costa Rica to Argentina, in mountains (Map 3).

**Records.** COSTA RICA: *San José Prov.*

Cerro de Escazú, 2,400 m, Dec. 1981, ♀ (W. Eberhard, MCZ); Pico Blanco, above Escazú, 2,000 m, March 1983, ♀ (W. Eberhard, MCZ); Bajo la Hondura, 28 March 1981, ♀ (V. Zelédón, ZMCR). *Alajuela*. Vara Blanca, ♀ (ZMCR). PANAMA: *Chiriquí Prov.* Cerro Punta, June 1962, ♀ (R. Zweifel, AMNH). COLOMBIA: *Dept. Magdalena*. Sierra Nevada de Santa Marta: 9–12 Feb. 1929, ♀ (P. J. Darlington, MCZ); San Pedro, 1,400 m, 17 Feb. 1974, ♂ (J. Kochalka, JAK); Serachui, 1,600 m, 4 March 1974, ♀ (J. Kochalka, JAK); Serra Nueva Granada, 1,600 m, April 1975, 2♀ (J. Kochalka, JAK). *Valle*. above Felicia, 1,800 m, ♀ (W. Eberhard, MCZ); Arriba de Saladito, 1,800 m, 24 Dec. 1973, ♀, ♂ (W. Eberhard, MCZ). BOLIVIA: *Dept. La Paz*. Chulumani, 1,700 m, Yungas, July 1955, ♂ (L. Peña, MCZ). ARGENTINA: *Salta Prov.* Calilegua, Valle Grande, Nov. 1968, ♀ (M. E. Galiano, MEG).

*Micrathena gaujoni* Simon  
Figures 144–148; Map 3

*Micrathena gaujoni* Simon, 1897b: 466. Five female syntypes from Loja, Ecuador (no. 7832, MNHN), examined and labeled.

**Description.** Female syntype. Carapace brown, with a dark brown band on each side of thorax; rim light. Sternum, coxae light brown; distal leg articles brown. Dorsum of abdomen gray with some white marks; spines usually orange to red-brown, tips black; sides with dark dorsoventral streaks and row of white spots; venter black between epigynum and spinnerets. Carapace with a narrow rim, distinct thoracic depression and high thorax. Abdomen longer than wide, with a pair of spines

one third from anterior end and three pairs of posterior spines (Figs. 144, 145). Total length, 8.3 mm. Carapace, 2.4 mm long, 1.8 mm wide. First femur, 2.7 mm; patella and tibia, 2.7 mm; metatarsus, 1.8 mm; tarsus, 0.8 mm. Second patella and tibia, 2.5 mm; third, 1.4 mm. Fourth femur, 3.0 mm; patella and tibia, 2.6 mm; metatarsus, 1.9 mm; tarsus, 0.8 mm.

**Variation.** Females vary in total length from 8.0 to 8.3 mm. The epigynum (Figs. 146–148) is quite variable in structure, perhaps due to differing amounts of sclerotization. The illustrations were made from specimens coming from SW of Mocoa, Colombia.

**Note.** The male is unknown.

**Diagnosis.** This species differs from *M. fisispina* by being smaller in size and having a sclerotized cheek on each side of the lobe of the epigynum (Fig. 146).

**Distribution.** Southern Colombia to Ecuador (Map 3).

**Records.** COLOMBIA: *Dept. Putumayo*. 40 km SW Mocoa, 3 March 1955, ♀ (E. I. Schlinger, E. S. Ross, CAS). EC-UADOR: Loja to Zamora, 1,800–2,200 m, 24–25 Aug. 1977, ♀ (L. Peña, AMNH).

*Micrathena fisispina* (C. L. Koch)  
Figures 149–155; Map 3

*Acrosoma fisispina* C. L. Koch, 1836: 54, fig. 208. Female from Brazil, lost.

*Micrathena fisispina*:—Simon, 1895: 852, fig. 903, ♀. Reimoser, 1917: 120, pl. 7, fig. 20, ♀. Roewer, 1942: 957. Bonnet, 1957: 2867.

*Micrathena tigris* Mello-Leitão, 1932: 87, fig. 5, ♀. Female type from Tapera, Pernambuco, Brazil (MNRJ), lost. NEW SYNONYMY.

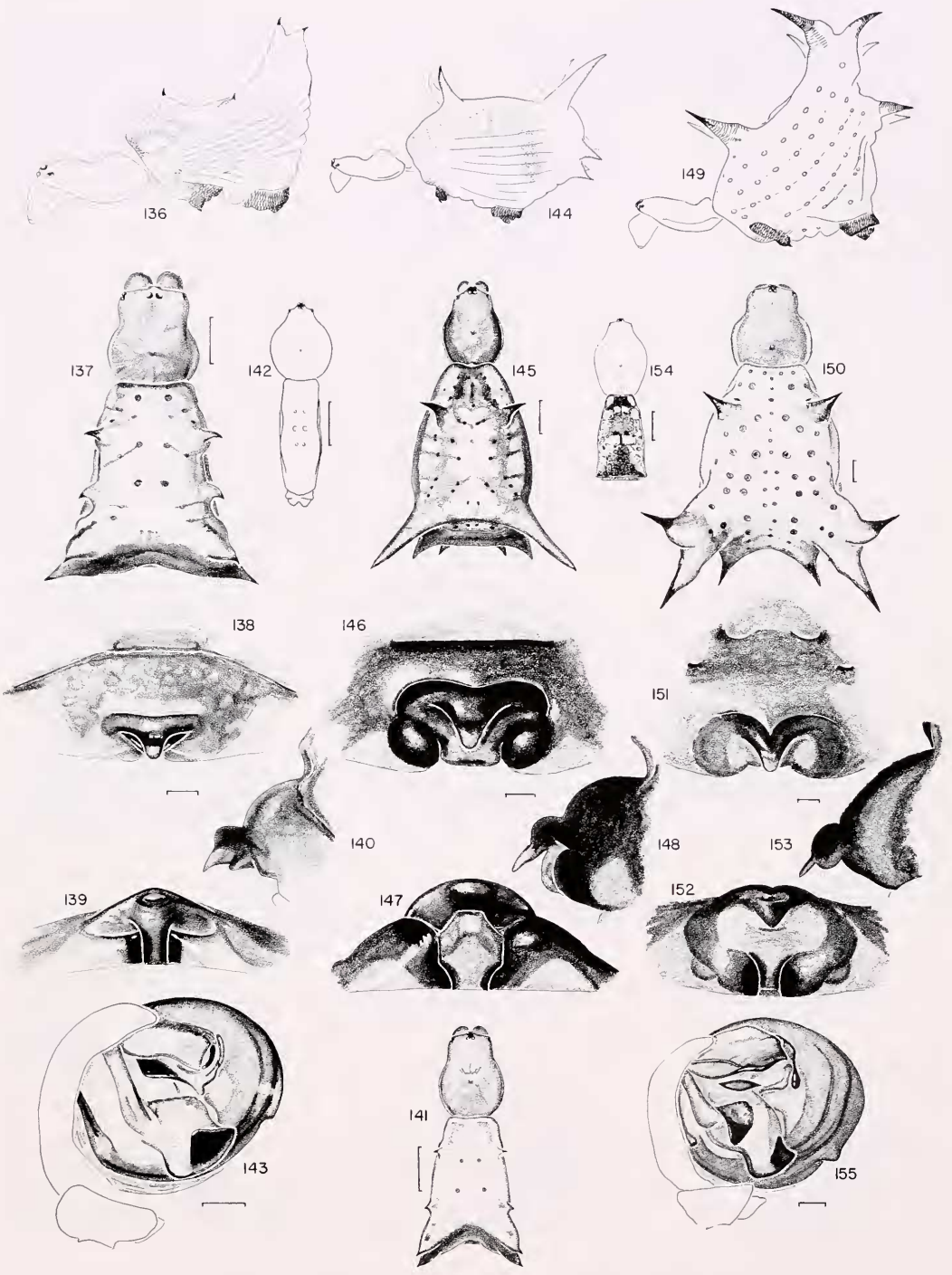
**Synonymy.** Several museums (ZMB, MNHN, PAN) have old specimens labeled

Figures 136–143. *Micrathena fidelis* (Banks). 136–140. Female. 136. Lateral. 137. Dorsal. 138. Epigynum, ventral. 139. Epigynum, posterior. 140. Epigynum, lateral. 141. Juvenile, dorsal. 142, 143. Male. 142. Dorsal. 143. Left palpus, mesal.

Figures 144–148. *Micrathena gaujoni* Simon, female. 144. Lateral. 145. Dorsal. 146. Epigynum, ventral. 147. Epigynum, posterior. 148. Epigynum, lateral.

Figures 149–155. *Micrathena fisispina* (C. L. Koch). 149–153. Female. 149. Lateral. 150. Dorsal. 151. Epigynum, ventral. 152. Epigynum, posterior. 153. Epigynum, lateral. 154, 155. Male. 154. Dorsal. 155. Palpus, mesal.

Scale lines. 0.1 mm, except Figures 136, 137, 141, 142, 144, 145, 149, 150, 154, 1.0 mm.



*fissispina*; all are this species. The type vial of *M. tigris* contained the type of *M. conspicua* (= *Chaetacis picta*); the illustration and description appear to be this species.

**Description.** Female. Carapace, sternum, legs orange-brown; rim of carapace white. Dorsum of abdomen white with tips of spines black; sclerotized areas orange-brown; sides and venter black with white patches. Carapace with thoracic depression and high thorax; lacking dimples. Abdomen with eight spines, of which the second and third pairs have a common socket (Figs. 149, 150). Total length, 12.0 mm. Carapace, 4.6 mm long, 3.8 mm wide. First femur, 5.2 mm; patella and tibia, 5.6 mm; metatarsus, 4.1 mm; tarsus, 1.4 mm. Second patella and tibia, 4.9 mm; third, 2.8 mm. Fourth femur, 6.2 mm; patella and tibia, 4.9 mm; metatarsus, 4.0 mm; tarsus, 1.4 mm.

Male. Carapace dark orange. Sternum, labium and endites black. Legs orange. Dorsum of abdomen white and black, venter black. Carapace low, with distinct thoracic depression; no dimples. First coxa with hook. Abdomen rectangular, slightly wider posteriorly (Fig. 154). Total length, 5.9 mm. Carapace, 2.9 mm long, 1.9 mm wide. First femur, 2.6 mm; patella and tibia, 2.5 mm; metatarsus, 1.9 mm; tarsus, 0.9 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.8 mm; patella and tibia, 2.1 mm; metatarsus, 1.9 mm; tarsus, 0.7 mm.

**Variation.** Females vary in total length from 8.7 to 13.0 mm.

**Note.** A collection from Itamarajá, Est. Bahia had a male collected with two females.

**Diagnosis.** *Micrathena fissispina* is larger than *gaujoni* and lacks the cheeks on each side of the epigynum lobe (Fig. 151). The male differs from other species by the sclerotized drop-shaped structure below the tip of the conductor and by the sclerite at the base of the median apophysis (Fig. 155).

**Distribution.** Eastern South America (Map 3).

**Records.** FRENCH GUYANA: Cayenne (PAN). BRAZIL: Est. Pará. Ilha do Marajó, June 1954, ♀ (W. Forster and O. Schindler, ZSM). Bahia. Salvador, ♀ (ZMB, ZMK); Itamarajá, 9 Dec. 1977, ♀, 7 Aug. 1978, 2♀, ♂ (J. Santos, FZRS); Mucurí, 14 Oct. 1979, ♀ (A. C. Niella, FZRS); Iguassú, 2 July 1926, ♀, 30 June 1924, ♀, 4 Aug. 1924, 3♂ (A. Roman, NRS); Camaçari, 14 Oct. 1978, ♀ (J. S. Santos, FZRS); Ilhéus, Jan. 1964, ♀, ♂ (Papavero, MZSP). Rio de Janeiro. Rio de Janeiro, ♀ (ZMK). São Paulo. Bertioga, 2 Jan. 1962, 3♀; 21 Nov. 1961, ♀, 22 Dec. 1961, 2♀ (A. Barroso, MZSP); Praia Itaguapé, 3 Feb. 1964, 2♀ (MZSP). Santa Catarina. 5♀ (MCZ); Blumenau, 15 Nov. 1886, 6♀ (NMW).

### *Micrathena raimondi* (Taczanowski)

Figures 156–163; Map 3

*Acrosoma raimondii* Taczanowski, 1879: 118. Female holotype from Montaña de Nancho, 3,600 pieds d'altitude [near Nanchoc, Cajamarca, 1,200 m], Peru (PAN), examined.

*Micrathena raimondi*:—Roewer, 1942: 962. Bonnet, 1957: 2875.

**Note.** The holotype has the scape of the epigynum broken off.

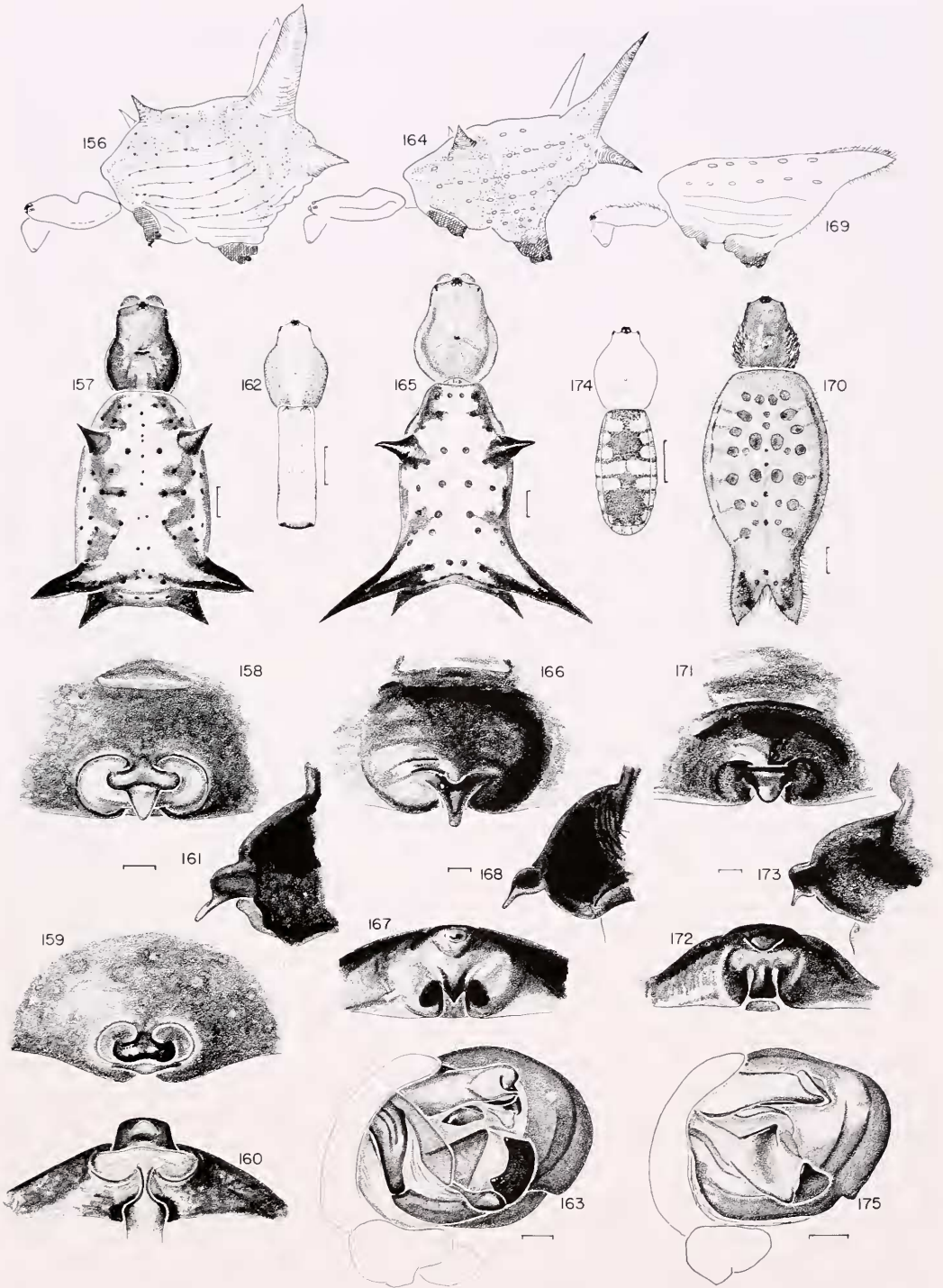
**Description.** Female from Cajamarca, Peru. Carapace brown, eye region and thorax light, sides of thorax dark, rim

Figures 156–163. *Micrathena raimondi* (Taczanowski). 156–161. Female. 156. Lateral. 157. Dorsal. 158, 159. Epigynum, ventral. 159. Scape tip torn off. 160. Epigynum, posterior. 161. Epigynum, lateral. 162–163. Male. 162. Dorsal. 163. Left palpus, mesal.

Figures 164–168. *Micrathena miles* Simon, female. 164. Lateral. 165. Dorsal. 166. Epigynum, ventral. 167. Epigynum, posterior. 168. Epigynum, lateral.

Figures 169–175. *Micrathena furcula* (O. P.—Cambridge). 169–173. Female. 169. Lateral. 170. Dorsal. 171. Epigynum, ventral. 172. Epigynum, posterior. 173. Epigynum, lateral. 174, 175. Male. 174. Dorsal. 175. Palpus, mesal.

Scale lines. 0.1 mm, except Figures 156, 157, 162, 164, 165, 169, 170, 174, 1.0 mm.



lightest. Sternum dark brown. Coxae and distal articles of legs brown. Dorsum of abdomen with a black longitudinal band on each side between spines (Fig. 157); sides with white spots; venter with white spots on side, but none in middle between epigynum and spinnerets. Carapace with a deep transverse groove and a narrow rim; no dimples (Fig. 157). Abdomen with three pairs of spines, middle one largest (Fig. 157). Total length, 10.4 mm. Carapace, 3.0 mm long, 2.4 mm wide. First femur, 3.2 mm; patella and tibia, 3.5 mm; metatarsus, 2.3 mm; tarsus, 0.9 mm. Second patella and tibia, 3.0 mm; third, 1.9 mm. Fourth femur, 3.8 mm; patella and tibia, 3.4 mm; metatarsus, 2.6 mm; tarsus, 1.0 mm.

Male. Carapace orange, sides brown. Sternum dark brown. Coxae orange, distal articles of legs brown; first legs darkest, third lightest. Dorsum of abdomen speckled white with some dark marks on corners; venter black. First coxa with hook; second femur with proximal groove. Abdomen rectangular (Fig. 162). Total length, 5.6 mm. Carapace, 2.6 mm long, 1.1 mm wide. First femur, 2.2 mm; patella and tibia, 2.3 mm; metatarsus, 1.7 mm; tarsus, 0.8 mm. Second patella and tibia, 2.0 mm; third, 1.2 mm. Fourth femur, 2.6 mm; patella and tibia, 2.2 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

*Variation.* Females vary in total length from 6.3 to 10.4 mm, males from 5.6 to 5.9 mm. The second pair of spines is variable in length.

*Note.* Three collections contained females together with males.

*Diagnosis.* Females of this species are distinguished from the similar *M. miles* by the dorsal markings, the dark patch between the first and second pair of abdominal spines on each side (Fig. 157), by the narrower carapace rim (Fig. 157), by the smaller size and the round frame on each side of the epigynum (Fig. 158).

The male differs from others of this species group by the shallow notch of the tip of the median apophysis and by the

shape of the tip of the terminal apophysis and conductor (Fig. 163).

*Distribution.* Ecuador and Peru (Map 3).

*Records.* ECUADOR: *Prov. Pichincha.* Tandapi, 1,300–1,500 m, 15–20 May 1965, 13♀, 2♂ (L. Peña, MCZ); Río Pilatón, 7♀ (G. W. Prescott, MCZ). Río Yocuchoqui, W slope of Andes, 2♀, ♂ (MCZ). PERU: *Dept. Cajamarca.* W of Porcullo [?], 15–19 May 1967, 9♀, ♂ (A. F. Archer and S. Risco, AMNH).

### *Micrathena miles* Simon

#### Figures 164–168; Map 3

*Micrathena miles* Simon, 1895: 852, fig. 907; 1896: 468. Female syntypes from Fonte Bôa and Tefé, Amazon, Brazil (no. 1172, MNHN), examined. Roewer, 1942: 960. Bonnet, 1957: 2872.

*Micrathena cuminamensis* Mello-Leitão, 1930: 62, fig. 16, ♀. Female from Rio Cuminá [Rio Paru de Ooste, Est. Pará], Brazil (MNRJ), lost. NEW SYNONYMY.

*Micrathena miles nigra* di Caporiacco, 1948: 667. Immature from Tumatumari, Guyana (ZMF), examined. NEW SYNONYMY.

*Synonymy.* The illustration of *M. cuminamensis* appears to be this species, although the sternum is described as being yellow. The type is lost, but there are two other specimens from Rio Cuminá in the MNRJ labeled *M. miles*. Di Caporiacco's specimen, an immature, appears also to be this species.

*Description.* Female from Rio Purus, Brazil. Carapace orange, rims light orange, sternum black. Coxae orange, distal leg articles orange-black. Dorsum of abdomen yellow-white, rimmed by black; sides black with dorsoventral rows of white spots; venter black with small paired black spots (Figs. 164–165). Carapace with distinct thoracic depression, wide rim and thorax higher than head; no dimples. Anterior and venter of femora have tubercles tipped by short, sharp setae. Abdomen longer than wide, with six spines (Figs. 164, 165). Total length, 11.5 mm. Carapace, 4.0 mm long, 3.2 mm wide. First femur, 5.2 mm; patella and tibia, 4.8 mm;

metatarsus, 3.7 mm; tarsus, 1.3 mm. Second patella and tibia, 2.7 mm; third, 2.3 mm. Fourth femur, 6.4 mm; patella and tibia, 5.0 mm; metatarsus, 4.8 mm; tarsus, 1.4 mm.

*Variation.* Females vary in total length from 11.5 to 13.2 mm.

*Note.* The male is unknown.

*Diagnosis.* This species differs from *Micrathena raimondi* by lacking a frame on each side of the transverse bar and lobe of the epigynum (Fig. 166). It differs from *M. kirbyi* by lacking anterior spines overhanging the carapace (Fig. 165).

*Distribution.* Amazon area (Map 3).

*Records.* BRAZIL: *Est. Pará.* Rio Tapajós, 25 Aug. 1978, 2♀ (Lacey, INPA); Rio Cuminá, 2♀ (no. 14085, MNRJ). *Acre.* Rio Purus, W of Sena Madureira, 5 Sept. 1973, ♀ (B. Patterson, MCZ). PERU: *Dept. Loreto.* Iquitos, May 1920, ♀ (H. S. Parrish, MCZ).

### *Micrathena furcula* (O. P.-Cambridge)

Plate 1; Figures 169–175; Map 4

*Acrosoma furcula* O. P.-Cambridge, 1890: 60, pl. 8, fig. 11, ♀. Female syntypes from Dolores, Menché on the river Usumacinta between Dolores and Chapallal [Dept. Petén], Guatemala (BMNH), lost. Keyserling, 1892: 17, pl. 1, fig. 13, ♀.

?*Micrathena pubescens* Simon, 1895: 854, figs. 917, 918. Juvenile female lectotype here designated from Mato Grosso (MNHN), examined and labeled. NEW DOUBTFUL SYNONYMY.

*Micrathena furcula*:—F. P.-Cambridge, 1904: 539, pl. 51, fig. 25, ♀. Reimoser, 1917: 89. Roewer, 1942: 958. Bonnet, 1957: 2368. Chickering, 1961: 416, figs. 60–66, ♀, ♂.

*Synonymy.* The immature specimen of *M. pubescens* was in a vial with an adult male of *M. plana* and some other immature specimens. Only finding an adult female from Mato Grosso will ascertain that there is only one species. Perhaps there is an error in the locality of Simon's specimen.

*Description.* Female from Panama. Carapace dark red-brown. Sternum black-brown. Legs brown. Abdomen brownish white on dorsum, sclerites brown; a black patch on each fork (Fig. 170), and some-

times median dark mark resembling that of male (Fig. 174); venter black; fork with a lighter band spreading posterolaterally from spinnerets. Carapace covered with down; with a round thoracic mark; no dimples or rim. Abdomen is forked, without spines (Fig. 170). Total length, 11.2 mm. Carapace, 3.2 mm long, 2.4 mm wide. First femur, 2.7 mm; patella and tibia, 2.7 mm; metatarsus, 1.8 mm; tarsus, 0.8 mm. Second patella and tibia, 2.2 mm; third, 1.4 mm. Fourth femur, 3.3 mm; patella and tibia, 2.7 mm; metatarsus, 1.9 mm; tarsus, 0.7 mm.

Male from Panama. Carapace, sternum dark brown, legs brown. Dorsum of abdomen with black and white marks (Fig. 174), sclerotized shield brown; venter black. Carapace slightly pubescent on sides with a median mark; no dimples or rim. Small coxal hook present; small groove on second femur. First and second legs strong, with macrosetae on femur and tibia. Total length, 4.8 mm. Carapace, 2.2 mm long, 1.5 mm wide. First femur, 1.6 mm; patella and tibia, 1.7 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 1.4 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.4 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm.

*Variation.* Females vary in total length from 8.4 to 11.0 mm, males from 4.7 to 4.8 mm.

*Note.* The male and female were matched by Chickering because immature males are strongly pubescent and otherwise look like the adult male. The structure of the male palpus (Fig. 175) indicates a close relationship to *M. mitrata* and *M. bimucronata*.

*Diagnosis.* The pubescence on the carapace and the forked abdomen (Figs. 169, 170) distinguish females from other species. The male palp is similar to that of species related to *M. bimucronata* with a sclerotized tooth at the base of the median apophysis, and separated from related species by the shape of the terminal apophysis and conductor (Fig. 175).

*Natural History.* Specimens have been

taken from *Sceliphron* wasp nests in Costa Rica.

*Distribution.* Guatemala to southern Colombia (perhaps Brazil) (Map 4).

*Records.* COSTA RICA: *Prov. Heredia.* La Selva, nr. Puerto Viejo, 29 June 1979, 4 July 1979, 2♀ (J. Coddington, MCZ). *Puntarenas.* Corcovado Natl. Park, Sirena Sta., 31 Aug. 1982, 2♀ (R. Matthews, MCZ). PANAMA: *Prov. Panamá.* Barro Colorado Island, Gatún Lake, many collections (AMNH, CUC, MCZ). COLOMBIA: *Dept. Valle.* Baja Calima, nr. Puerto Patina, 10–13 July 1981, ♀ (B. Opell, MCZ).

*Micrathena bimucronata* (O. P.-Cambridge)  
Figures 176–182; Map 4

*Acrosoma bimucronatum* O. P.-Cambridge, 1899: 302, pl. 36, fig. 14, ♀. Twelve female syntypes from Cahabón, seven from Chisec and nine from Menché, Guatemala (BMNH), examined.

*Micrathena bimucronata*:—F. P.-Cambridge, 1904: 538, pl. 51, fig. 23, ♀. Reimoser, 1917: 124. Roewer, 1942: 954. Bonnet, 1957: 2863. Chickering, 1961: 936, figs. 1–5, ♀.

*Description.* Female from Costa Rica. Carapace brown, head region orange; rim of thorax narrow and light. Sternum dark brown. Coxae and legs lighter orange. Dorsum of abdomen white with posterior spines having some black pigment; sides with indistinct vertical black bands; venter white with transverse black band through middle and more bands posteriorly connecting with vertical bands. Carapace high with U-shaped thoracic depression and two pairs of dimples (Fig. 177). Abdomen with two posterior spines and minute denticles on sides of posterior half (Figs. 176, 177). Total length, 6.0 mm. Carapace, 2.0 mm long, 1.9 mm wide. First femur, 2.0 mm; patella and tibia, 2.1 mm; metatarsus, 1.3 mm; tarsus, 0.5 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.2 mm; patella and tibia, 2.0 mm; metatarsus, 1.4 mm; tarsus, 0.8 mm.

Male from Costa Rica. Carapace, legs orange. Sternum dusky orange. Dorsum of abdomen with white patches and indistinct black marks; venter blackish. Cara-

pace with distinct thoracic depression. First coxa with small hook, second femur with groove. Abdomen slightly longer than wide, rounded behind (Fig. 181). Total length, 3.5 mm. Carapace, 1.7 mm long, 1.3 mm wide. First femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.1 mm; third, 0.6 mm. Fourth femur, 1.4 mm; patella and tibia, 1.1 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 4.5 to 6.2 mm, males from 3.3 to 3.6 mm. Posterior lateral spines of many specimens are longer than those illustrated (Fig. 177).

*Note.* Males and females were matched from a collection by W. Peck of females with two males from Turrialba, Costa Rica.

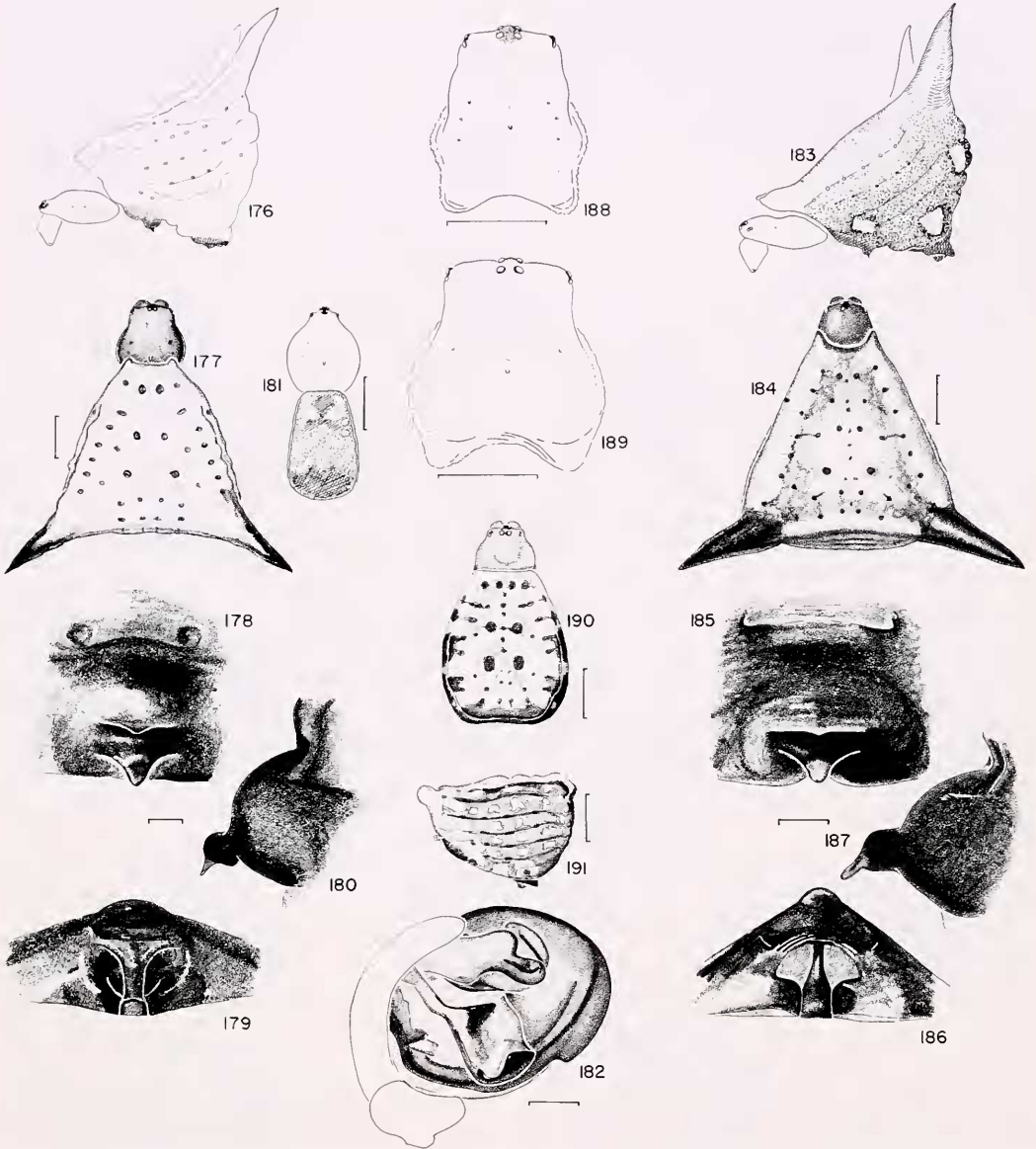
*Diagnosis.* The coloring of *M. bimucronata* is quite different from that of *M. rufopunctata* (Fig. 177), and the epigynum has a wider septum in posterior view (Fig. 179). The terminal apophysis covering the embolus has lobes differently shaped from those of *M. mitrata*, and the conductor is more distant from the tip of the cymbium (Fig. 182).

*Natural History.* Webs were found in low vegetation and dense jungle in Costa Rica.

*Distribution.* Chiapas to western Panama (Map 4).

*Records.* MEXICO: *Est. Chiapas.* Lacandone forest, 40 km NE of Ocosingo, 4 March 1945, ♀ (T. C. Schneirla, AMNH). HONDURAS: *Dept. Atlántida.* Lancetilla, 29 July 1929, ♂ (A. M. Chickering, MCZ). COSTA RICA: *Heredia Prov.* La Selva, Puerto Viejo, Dec. 1980, 2♂ (W. Eberhard, MCZ), ♀ (L. Higgins, MCZ); nr. La Virgen, 8 Aug. 1978, ♀ (A. M. Young, MPM). *Cartago.* Turrialba, 10–17 April 1944, ♀, ♂, 15–30 May 1944, ♀ (F. Schrader, AMNH), March 1967, 4♀, 2♂ (W. Peck, EPC). *Limón.* Siquirres, 20–23 May 1944, ♀ (F. Schrader, AMNH); Sixola River, ♀ (G. C. Wheeler, MCZ); Tortuguero Natl. Park, low wet coast forest, 25 Sept. 1976, ♀ (C. L. Craig, MCZ); Tortuguero,





Figures 176–182. *Micrathena bimucronata* (O. P.-Cambridge). 176–180. Female. 176. Lateral. 177. Dorsal. 178. Epigynum, ventral. 179. Epigynum, posterior. 180. Epigynum, lateral. 181, 182. Male. 181. Dorsal. 182. Left palpus, mesal.

Figures 183–187. *Micrathena rufopunctata* (Butler), female. 183. Lateral. 184. Dorsal. 185. Epigynum, ventral. 186. Epigynum, posterior. 187. Epigynum, lateral.

Figure 188. *Micrathena mitrata* (Hentz), female carapace. Figures 189–191. *Micrathena saccata* (C. L. Koch). 189. Female carapace. 190, 191. Immature male. 190. Dorsal. 191. Abdomen, lateral.

Scale lines. 0.1 mm, except Figures 176, 177, 181, 183, 184, 188–191, 1.0 mm.

Feb. 1931, 2♀ (Nevermann, NMW); Waldeck Farm, 45 km N of Limón, 11 Aug. 1930, ♀ (E. Reimoser, NMW). *Guana-caste*. Carillo, ♀ (MCZ). *San José*. San José, ♀ (MCZ). PANAMA: *Prov. Bocas del Toro*. 5♀, 11 imm. (F. R. Swift, CUC).

*Micrathena rufopunctata* (Butler)  
Figures 183–187; Map 4

*Acrosoma rubrocinctum* Butler, 1873: 423. Female holotype from Brazil (BMNH), examined. NEW SYNONYMY.

*Acrosoma rufopunctatum* Butler, 1873: 423. Female holotype from Jamaica (BMNH), examined.

*Micrathena rufopunctata*:—Reimoser, 1917: 152. Roewer, 1942: 962. Bonnet, 1957: 2875. Chickering, 1964: 277, figs. 64–67, ♀.

*Micrathena rubrocincta*:—Reimoser, 1917: 153. Roewer, 1942: 962. Bonnet, 1957: 2875.

*Note*. No other specimens of *M. rubrocincta* have been found from Brazil. The type specimen is another of *M. rufopunctata*, with an erroneous locality. Even though the name *rubrocincta* has line priority over *rufopunctata*, I use the latter because it has the correct locality and there are literature references.

The types had been pinned and are in poor physical condition. They are now in alcohol.

*Description*. Female. Carapace, sternum, legs dark brown. Dorsum of abdomen with orange band on each side, a transverse posterior orange band enclosing subtriangular area of white pigment overlain by black all around, with white only in center (Fig. 184); posterolateral spines dark brown; venter black with three pairs of discreet white patches, probably red in living specimens (Fig. 183). Carapace fairly high with circular thoracic

depression, sometimes with an indistinct pair of dimples (Fig. 183). Abdomen subtriangular with a pair of anterior blunt humps overhanging carapace and very strong, large posterolateral spines. Total length, 5.2 mm. Carapace, 1.9 mm long, 1.7 mm wide. First femur, 1.7 mm; patella and tibia, 1.7 mm; metatarsus, 1.1 mm; tarsus, 0.6 mm. Second patella and tibia, 1.5 mm; third, 1.0 mm. Fourth femur, 1.9 mm; patella and tibia, 1.5 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

*Note*. The male is unknown.

*Diagnosis*. The striking coloration of *M. rufopunctata* separates the species from the similar *M. bimucronata*.

*Distribution*. Jamaica, uncommon (Map 4).

*Records*. JAMAICA. *St. Ann's Parish*: Mt. Diabolo Forest Reserve, 29 June 1960, 3♀ (T. H. Farr, AMNH), 19 Aug. 1960, ♀ (T. H. Farr, IJK). *Portland*. Ecclesdown, 21 June 1961, ♀ (T. H. Farr, IJK). *St. Catherine*. Guanaboa Vale, 13 Nov. 1960, ♀ (T. H. Farr, IJK). *Manchester*. Christiana, 11 June 1959, ♀ (T. H. Farr, IJK). *Trelawny*. NW of Quickstep, 17 March 1962, ♀ (J. Poulter, IJK).

*Micrathena mitrata* (Hentz)  
Figures 188, 192–198; Map 4

*Epeira mitrata* Hentz, 1850: 22, pl. 3, fig. 11, ♀. Syn-types from North Carolina and Alabama, destroyed.

? *Micrathena peruana* Taczanowski, 1879: 116, pl. 1, fig. 32, ♀. Female holotype from Amable María [Junín, Prov. Tarma], Peru (PAN), examined. NEW SYNONYMY.

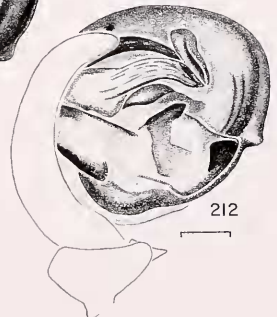
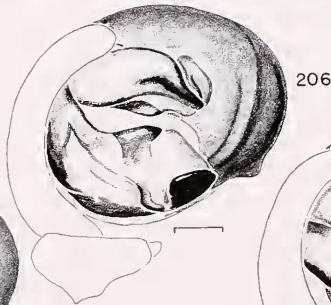
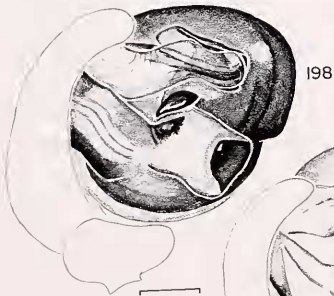
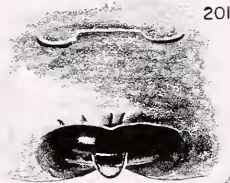
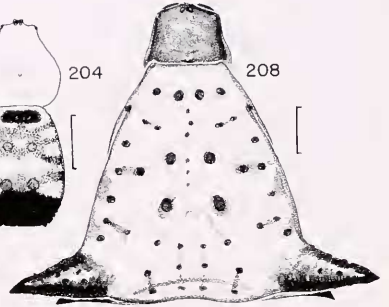
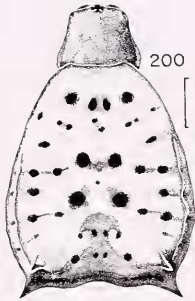
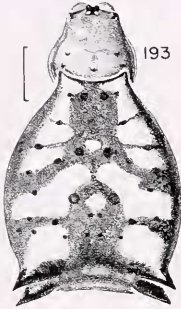
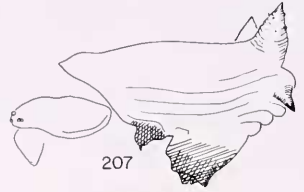
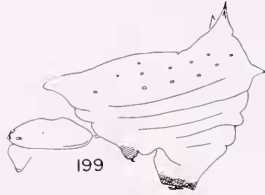
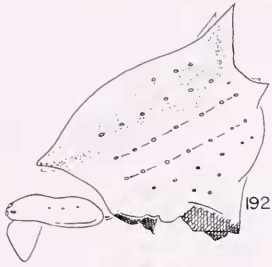
*Micrathena patruelis*:—F. P.-Cambridge, 1904, 583. Roewer, 1942: 960. Bonnet, 1957: 2873. Chickering, 1961: 445 [in part only]; misidentification, not *M. patruelis* (C. L. Koch).

Figures 192–198. *Micrathena mitrata* (Hentz). 192–196. Female. 192. Lateral. 193. Dorsal. 194. Epigynum, ventral. 195. Epigynum, posterior. 196. Epigynum, lateral. 197, 198. Male. 197. Dorsal. 198. Left palpus, mesal.

Figures 199–206. *Micrathena patruelis* (C. L. Koch). 199–203. Female. 199. Lateral. 200. Dorsal. 201. Epigynum, ventral. 202. Epigynum, posterior. 203. Epigynum, lateral. 204–206. Male. 204. Dorsal. 205, 206. Palpus, mesal. 205. (Est. Bahia, Brazil). 206. (Prov. Misiones, Argentina).

Figures 207–212. *Micrathena saccata* (C. L. Koch). 207–211. Female. 207. Lateral. 208. Dorsal. 209. Epigynum, ventral. 210. Epigynum, posterior. 211. Epigynum, lateral. 212. Male palpus, mesal.

*Scale lines*. 0.1 mm, except Figures 192, 193, 197, 199, 200, 204, 207, 208, 1.0 mm.



*Micrathena patruelis luteomaculata* Strand, 1908: 4. Female holotype from "Popayan oder Cauca" [Popayan, Dept. Cauca], Colombia (SMF), examined. NEW SYNONYMY.

*Micrathena patruelis mediovittata* Strand, 1908: 4. Two female syntypes from "Popayan oder Cauca" [Popayan, Dept. Cauca], Colombia (SMF), examined. NEW SYNONYMY.

*Micrathena mitrata*:—Levi, 1978: 428, figs. 28–40, ♀, ♂.

*Synonymy.* A male from Peru is needed to ascertain the synonymy of *M. peruana*. The holotype of *M. patruelis luteomaculata* has a black and white abdomen; that of *M. patruelis mediovittata* has an orange, leathery abdomen.

In collections most specimens from Mexico and Central America had been misidentified as *M. patruelis*.

*Variation.* Females from Mexico and Central America vary in total length from 4.1 to 5.6 mm, males from 3.5 to 3.9 mm. Some females are dark colored (Fig. 193), others have only little black pigment on the dorsum; some have anterior humps (Fig. 193), some not. One female from Jalisco, Est. Nayarit, had an additional pair of small lateral humps anterior of the upper posterior spines and had the posterior depressions of the epigynum, with the septum indistinct and the depressions wider. Central American specimens lack the last two pairs of dimples on the carapace; the carapace thus resembles that of *M. saccata*.

*Micrathena saccata*, *M. patruelis* and *M. mitrata* are problematic. *Micrathena mitrata* is the common species in eastern North America. *M. saccata* and *patruelis* were described and pictured by C. L. Koch from Brazil (1836: 59 and 1839: 130) illustrating similar abdomens. F. P.-Cambridge (1904: 528) considered specimens from Central America and Mexico to belong to *patruelis* and to differ from *mitrata* by having the upper spines larger than the lower. Reimoser (1917: 80) thought that the lower spines were farther apart than the upper in Mexican and Central American *M. patruelis*, the upper farther apart in *M. mitrata*. He considered

*M. saccata* to be the species from Cayenne, Guyana and Venezuela, with longer upper spines than lower (Figs. 207, 208). Chickering (1961) was puzzled by his specimens and illustrated specimens from the Canal Zone as *patruelis*, which Reimoser (and I) have considered *M. saccata*.

In the AMNH collection all specimens from Mexico to Panama had been labeled *patruelis*, and similar specimens from Texas *mitrata*. At first I thought them to be the same, but found that the males from Panama labeled *M. patruelis* (Fig. 212) were distinct from Mexico and Texas males (Fig. 198). Also, *M. mitrata* in the north has six dimples on the thorax (Fig. 188); specimens labeled *M. patruelis* in Central America have only two (Fig. 189). When examining collections from southern Brazil and Argentina I came across other specimens similar to *M. mitrata* (Figs. 199–206), but with the epigynum similar to Panamanian specimens, and a male palpus (Figs. 205, 206) closer to *M. mitrata* from Texas and Mexico. Reexamination of all Mexican and Central American specimens showed two populations in Central America: a smaller, rarer *M. mitrata* (abdomen and epigynum; Figs. 192–195), and a common, larger species with longer upper spines (Figs. 207–210). Here I follow Reimoser, the first reviser, and consider the larger species *M. saccata* and the smaller species *M. mitrata*. I consider the southern South American specimens to belong to a third species, *M. patruelis*. Only the collection of males in intermediate areas will show whether this is correct.

*Diagnosis.* Females of *M. mitrata* differ from the similar *M. saccata* by having upper and lower spines subequal in size (Figs. 192, 193); in *M. saccata* the dorsal spines are noticeably longer (Figs. 207, 208). The transverse bar of the epigynum is shorter than that of *M. saccata* (Fig. 194), forming with the lobe an almost equilateral triangle (Fig. 194). The largest Central American *M. mitrata* females were 5.6 mm in total length, the smallest

*M. saccata* 6.0 mm. Females of *M. mitrata* from Mexico and Central America may have slight anterior abdominal humps (Fig. 193).

Males differ from *M. saccata* by having the embolus hidden in mesal view underneath the undulating terminal apophysis (Fig. 198); in *M. saccata* the embolus is arched above the terminal apophysis. The palpus differs from that of *M. bimucronata* by having the conductor (which surrounds the tip of the embolus and terminal apophysis) close to the tip of the cymbium (Fig. 198), while in *M. bimucronata* it is separated from the tip of the cymbium by a distance equal to its own length.

*Distribution.* Eastern United States to northern South America; absent from the West Indies. Specimen from Acre, Brazil, 6.1 mm in total length, may not be this species. The southernmost males in collections are from Costa Rica (Map 4).

*Records.* MEXICO: *Est. Tamaulipas.* 65 km S of Linares. *Nuevo León.* San Roque; Juárez. *Coahuila.* Simojovel, San Isidro. *San Luis Potosí.* Tamazunchale; 5 km W El Naranjo; Pícolo; Huichichuyan; E of Ciudad del Maíz; Valles. *Sinaloa.* Copala; W San Ignacio, 260 m. *Nayarit.* Tepic. *Jalisco.* Plan de Barrancas. *Veracruz.* Fortín de las Flores; El Fortín; Papantla, Cordoba; Chocomán, Tlapacoyan; La Buena Ventura; Atoyac; Mirador Zacupam, Medias Aguas. *Guerrero.* Acamixtla. *Oaxaca.* Soyaltepec; Tolosa. *Tabasco.* Teapa. *Yucatan.* Colonia Yucatan; Chichen Itza. *Quintana Roo.* Kohunlich ruins, 9 km S Francisco villa. *Chiapas.* Arriago; Montebello; 105 km SE of Palenque; Escuintla; nr. Huehuetan; Huixtla; Palenque ruins; Prusia; Tonalá; Tapachula; Ixtacomitán. GUATEMALA: Variedades; Yepocapa; Guatemala City; Tucuru; Reunion; Ayutla; Coban; Chicacao El Naranjo. HONDURAS: Lancetilla; Tela; Copán. BELIZE: El Cayo. EL SALVADOR: Quetzaltepeque; Santa Tecla; San Salvador. NICARAGUA: San Marcos; Granada. COSTA RICA: *Prov. Puntare-*

*nas.* Oza Peninsula, 40 km SW Rincon; Corcovado Natl. Park, Sirena Station; Golfito; Turrialba; San Isidro del General, 650–1,300 m. PANAMA: *Prov. Panamá.* Cerro Galero, 7 Jan. 1977, ♀ (H. Levi, Y. Lubin, MCZ); Summit, July 1950, ♀ (A. M. Chickering, MCZ); Balboa, 3 Aug. 1943, ♀ (J. B. Duncan, AMNH). ECUADOR: *Los Rios Prov.* San Carlos, 1 May 1984, ♀ (F. Manging, MECN). *Pichincha.* km 113 vía Pto. Quito, 19 May 1984, ♀ (L. Avilés, MECN). *Guayas.* Milagro; Colonche A., 1941, ♀ (R. W. Landes, EPC). PERU: *Dept. Junín.* Utcuyacu, March 1948, ♀ (F. Woytkowski, AMNH). BRAZIL: *Est. Acre.* Rio Purus, W of Sena Madureira, 9 Oct. 1973, ♀ (B. Patterson, MCZ).

*Micrathena patruelis* (C. L. Koch)  
Figures 199–206; Map 4

*Acrosoma patruelle* C. L. Koch, 1839: 130, pl. 130, fig. 524, ♀. Female from Brazil (ZSM), destroyed.

*Note.* F. P.-Cambridge, 1904, Reimoser, 1917 and Chickering used the name *patruelis* for southernmost specimens of *Micrathena mitrata*. *Micrathena mitrata*, however, probably does not occur in Brazil, the type locality. The name has to be used for a very similar species common in southern Brazil.

*Description.* Female. Carapace, legs dark brown. Sternum blackish brown. Dorsum of abdomen white with black marks (Fig. 200); venter black, sclerotized areas brown. Carapace swollen with a distinct thoracic depression and at most one pair of dimples. Abdomen with four subequal posterior spines (Figs. 199, 200). Total length, 5.4 mm. Carapace, 1.8 mm long, 1.7 mm wide. First femur, 1.6 mm; patella and tibia, 1.7 mm; metatarsus, 1.1 mm; tarsus, 0.6 mm. Second patella and tibia, 1.5 mm; third, 0.9 mm. Fourth femur, 2.0 mm; patella and tibia, 1.6 mm; metatarsus, 1.1 mm; tarsus, 0.6 mm.

Male. Carapace orange. Sternum black. Legs orange. Dorsum of abdomen white and black; venter black with white on each side behind spinnerets. First coxa with

hook. Total length, 4.1 mm. Carapace, 1.9 mm long, 1.4 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm; tarsus, 0.5 mm. Second patella and tibia, 1.0 mm; third, 0.6 mm. Fourth femur, 1.3 mm; patella and tibia, 1.0 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 4.9 to 6.2 mm, males from 3.6 to 4.7 mm. The terminal apophysis of the palpi of the two males examined differs, as does the relative size of the tegulum (Figs. 205, 206) (see discussion under *M. mitrata*).

*Diagnosis.* Females are difficult to separate from *M. mitrata* found in the northern hemisphere. They differ mainly by having a longer transverse bar in the epigynum and a smaller lobe (Fig. 201). The epigynum thus resembles that of *M. saccata*. Females can be separated from *M. saccata* by having the two pairs of abdominal spines the same size (Figs. 199, 200).

Males have a smaller conductor (Figs. 205, 206) than *M. mitrata*; the terminal apophysis is of different but varying shape (Figs. 205, 206), and the embolus as seen through the terminal apophysis is heavier than that of *mitrata*. The edge of the tegulum is farther away from the conductor than in related species (Figs. 205, 206).

*Distribution.* Bahia state to northern Argentina. It is uncertain whether some females from Pará belong to this species or to *mitrata*, since we do not have males (Map 4).

*Records.* BRAZIL: *Est. Bahia.* Iguassú, 1924, 19♀, 3♂ (NRS). *Rio de Janeiro.* Pimheiro, ♀ (MNRJ). *Mato Grosso.* Chavantina, Oct. 1946, ♀ (H. Sick, MZSP). *Mato Grosso do Sul.* Três Lagoas, 20 May 1964, ♀ (MZSP). *São Paulo.* Ourinhos, 1901, ♀ (T. Lima, MZSP). PARAGUAY: *Dept. Amamtay.* P. N. Cerro Caré, May–June 1982, ♀ (J. A. Kochalka, JAK). *Concepción.* Territ. Foncière, 1908, 2♀ (E. Reimoser, NMW). ARGENTINA: *Misiones Prov.* Montecarlo, 3 Dec. 1965, ♀ (Giaschi, AMNH); Pto. 17 de Octubre, Oct. 1953, 20♀, 3♂ (De Carlo *et al.*, MACN); San Ig-

nacio, Dec. 1948, 4♀ (M. Birabén, MULP). *Salta.* ?Tabacal, ♀ (33484, MACN).

*Micrathena saccata* (C. L. Koch)

Plate 2; Figures 189–191, 207–217; Map 4

*Acrosoma saccatum* C. L. Koch, 1836: 59, pl. 59, fig. 212, ♀. Female specimen from Brazil (ZSM), destroyed.

? *Micrathena imbellis* Simon, 1895: 854, fig. 916; 1896: 49. Three juvenile syntypes from Corosal [10 km W of Caracas] and San Esteban [6 km S of Puerto Cabello], Venezuela (No. 10009, MNHN), examined. NEW SYNONYMY.

*Micrathena patruelis*.—F. P.-Cambridge, 1904: 533, pl. 50, figs. 15, 16, ♀, ♂ (in part). Reimoser, 1917: 102, pl. 4, fig. 7, ♀ (in part). Roewer, 1942: 960. Bonnet, 1957: 2873. Chickering, 1961: 445, figs. 138–145, ♀, ♂ [in part only, misidentification; not *M. patruelis* (C. L. Koch)].

*Micrathena saccata*.—Reimoser, 1917: 123, pl. 8, fig. 22, ♀. Roewer, 1942: 962. Bonnet, 1957: 2876.

*Micrathena retracta* Chamberlin and Ivie, 1936: 57, fig. 131, ♀. Female holotype from Barro Colorado Island, Panama (AMNH), examined. First synonymized with *patruelis* by Chickering. NEW SYNONYMY.

*Micrathena timida* di Caporiacco, 1947: 21. Juvenile holotype from British Guyana (MZUF), examined; 1948: 667, fig. 79. NEW SYNONYMY.

*Synonymy.* The largest specimen of *M. imbellis* is a juvenile lacking posterior spines on the abdomen, as do immature males. Another specimen is an immature male; the smallest is 2.0 mm long without spines. The specimens are illustrated (Figs. 190, 191); they may be *M. mitrata*. *Micrathena timida* is an immature.

*Description.* Female. Carapace, sternum dark brown. Legs and coxae dark brown. Dorsum of abdomen white with some black marks (Fig. 208); venter black with some white patches behind. Carapace swollen with distinct thoracic depression and one pair of indistinct dimples, or dimples absent (Fig. 189). Abdomen with two pairs of spines, upper pair longest (Figs. 207, 208, 213, 214). Total length, 6.5 mm. Carapace, 2.4 mm long, 2.0 mm wide. First femur, 2.0 mm; patella and tibia, 2.0 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth fe-

mur, 2.4 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

Male. Carapace, legs brown. Sternum dark. Dorsum of abdomen with black pigment and white pigment in paired white patches surrounded by zone free of black. Thorax with median mark. Small hook on first coxa and groove on second femur. Abdomen relatively short, rectangular. Total length, 3.7 mm. Carapace, 1.7 mm long, 1.4 mm wide. First femur, 1.4 mm; patella and tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.6 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.6 mm; patella and tibia, 1.3 mm; metatarsus, 0.9 mm; tarsus, 0.6 mm.

*Variation.* Females vary in total length from 6.0 to 6.8 mm in Central America; the smallest came from Guyana and Brazil and were 5.5 mm. Males vary in total length from 3.2 to 3.7 mm. The carapace of females lacks dimples; sometimes only the first pair is present, the other indistinct. The abdomen of females is very variable. Specimens from Guyana had the longest upper spines. This species appears distinct from the sympatric *M. mitrata*, but is it distinct from *M. patruelis*? (see discussion under *M. mitrata*). One specimen from Trinidad has a leathery abdomen and was first considered distinct (Figs. 213–217).

*Note.* Chickering first matched males with females.

*Diagnosis.* *Micrathena saccata* is always larger than sympatric specimens of *M. mitrata* in Central America. The epigynum has a longer transverse bar than that of *M. mitrata* and the lobe is relatively smaller (Figs. 209, 215). The upper spines are always longer than the lower (Figs. 207, 208, 213, 214). Males are separated by the curved terminal apophysis and embolus arched above this structure, permitting the embolus to be visible (Fig. 212).

*Distribution.* Honduras to central South America (Map 4).

*Records.* HONDURAS: *Dept. Atlántida*. Tela, ♀ (A. M. Chickering, MCZ). COSTA RICA: *Cartago Prov.* Turrialba,

15 Aug. 1963, ♂ (W. Peck, EPC). PANAMA: *Prov. Panamá*. El Valle; Fort Davis; Barro Colorado Island; Gamboa; Madden Dam area; Summit; Fort Randolph; Taboga Island. TRINIDAD: Navy base, SW Trinidad, ♀. VENEZUELA: *Est. Carabobo*. San Esteban, Jan. 1940, 3 imm., 3♀ (P. Andruze, AMNH). *Dist. Fed.* Caracas, 4♀ (NMW). GUYANA: *Essequibo Distr.* Onoro region, upper Essequibo Riv., Dec. 1937, ♀ (W. G. Hassler, AMNH). *Bartica*. Kartabo, many coll. (CUC, AMNH). FRENCH GUIANA: Cayenne, ♀ (K. Jelski, PAN). Port du Salut, ♀ (K. Jelski, PAN). COLOMBIA: *Dept. Magdalena*. Río Frío, 8 Aug. 1926, ♀ (F. W. Walker, AMNH). *Meta*. 45 km W of Villavicencio, 1,500 m, June 1947, ♀ (L. Richter, AMNH). ECUADOR: *Prov. Los Rios*. Pichilingue, 2 Feb. 1955, ♀ (E. I. Schlinger, E. S. Ross, CAS). *Guayas*. Zápotal, 7 April 1941, ♀, ♂ (J. Barrett, EPC). PERU: *Dept. Huánuco*. 110 km E of Tingo María, 11 Dec. 1954, imm. (E. I. Schlinger, E. S. Ross, CAS). *Loreto*. Río Samiria, Oct. 1912, ♀ (Bluntschli-Beyer, AMNH). BRAZIL: *Est. Pará*. Belém, July 1972, 3♀ (D. G. McGrath, MCZ; M. Galiano, MEG); 50 km E of Canindé, Rio Gurupi, 1963, ♀ (B. Malkin, AMNH, MZSP); Canindé, Oct. 1964, ♀ (B. Malkin, AMNH); Jacazeacanga, Oct. 1959, ♀ (M. Alvarenga, AMNH). *Mato Grosso*. Barra do Tapirapé, 15–25 July 1963, ♀ (B. Malkin, AMNH). *Rondônia*. Abunã, March 1922, ♀ (J. H. Williamson, MCZ).

### *Micrathena cubana* (Banks)

Figures 218–224; Map 4

*Acrosoma cubana* Banks, 1909a: 163, pl. 45, fig. 2.

Juvenile holotype from San Diego de Los Baños [Pinar del Río Prov.], Cuba (MCZ), lost.

*Micrathena rediviana* var. *alba* Franganillo, 1936: 47, fig. 50, ♀. NEW SYNONYMY.

*Micrathena rediviana* var. *rufa* Franganillo, 1936: 98. NEW SYNONYMY.

*Micrathena cubana*.—Bryant, 1940: 371, figs. 137, 138, 144, 152, 153, ♀ (not male). Roewer, 1942: 956. Bonnet, 1957: 2865. Chickering, 1964: 256, figs. 4–7, ♀.

*Micrathena forcipata*.—Bryant, 1940: 372, figs. 141,

146, ♂. Chickering, 1964: 257, fig. 16, ♂. (Male only; misidentification, not *M. forcipata*).

*Description.* Female. Carapace, sternum, legs dark brown. Dorsum of abdomen with black T-shaped patch on white (Fig. 219); sides black with some white spots; venter black. Carapace with three pairs of dimples, a circular thoracic depression, and a narrow, light rim. Femora corniculate. Abdomen with pair of short, soft anterior tubercles, one pair large posterior upper spines, a smaller pair below (Figs. 218, 219); upper spines with some tubercles bearing setae. Total length, 7.0 mm. Carapace, 2.4 mm long, 2.1 mm wide. First femur, 2.2 mm; patella and tibia, 2.3 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm. Second patella and tibia, 2.0 mm; third, 1.2 mm. Fourth femur, 2.7 mm; patella and tibia, 2.2 mm; metatarsus, 1.6 mm; tarsus, 0.6 mm.

Male. Carapace, sternum, legs brown. Dorsum of abdomen with white patches on brown background (Fig. 223); venter black. Carapace with two or three pairs of dimples and a thoracic depression. Hook on first coxa. Sides of abdomen parallel, posterior rounded (Fig. 223). Total length, 3.6 mm. Carapace, 1.0 mm long, 0.6 mm wide. First femur, 1.4 mm; patella and tibia, 1.5 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm. Second patella and tibia, 1.3 mm; third, 0.7 mm. Fourth femur, 1.7 mm; patella and tibia, 1.2 mm; metatarsus, 1.0 mm.

*Variation.* Females vary in total length from 4.8 to 6.8 mm, males 3.5 to 3.6 mm. All females and juveniles examined had similar black marks on the dorsum of the

abdomen. Another male had the conductor and the paramedian apophysis relatively larger than the one illustrated (Fig. 224), but of the same shape.

*Note.* Even though the male had been collected with females and has the palpus like that of the related *M. mitrata* and *M. saccata*, Bryant and Chickering mistook the male to be that of *M. forcipata*.

*Diagnosis.* The black T-shaped patch on the dorsum of the abdomen and the shape of the abdomen (Figs. 218, 219) distinguish females from *M. mitrata* and *M. saccata*, neither of which occurs in Cuba. Males differ from these two similar species by the shape of the conductor, which has a slit (Fig. 224). The embolus when viewed through the terminal apophysis has a bifurked tip (Fig. 224).

*Natural History.* *Micrathena cubana* has been collected from gardens, woods and a ravine in mountain forest at an elevation of 600 to 1,000 m.

*Distribution.* Cuba (Map 4).

*Records.* CUBA: *Santiago Prov.* Sierra del Cobra, Loma del Gato, 800–1,000 m, 7♀, ♂ (MCZ), 5♀ (AMNH); Jiguaní, Los Negros, ♀ (MCZ); Jiguaní, Los Altos, ♀ (MCZ); coast below Pico Turquino, ♀ (MCZ); Puerto Boniato, ♀ (AMNH), ♀ (L. F. Armas, CASH); Río Piloto, Sierra de Nipe, ♀ (R. Bielanski, A. Riedel, PAN). *Guantánamo.* N of Imías, 900–1,200 m, 2♀ (MCZ); Cuchillo de Guájimero, 600 m, ♀ (MCZ); Gran Piedra, ♀ (AMNH); Monte Verde, ♀ (O. Garrido, J. de la Cruz, CASH). *Cienfuegos.* Soledad, ♀ (MCZ); Trinidad, Mina Carlotta, ♀ (many coll., MCZ); Sierra Trinidad, Buenos Aires, 750–1,050 m, ♀, ♂ (MCZ); Trinidad Mts., 750 m, ♀ (MCZ), 7

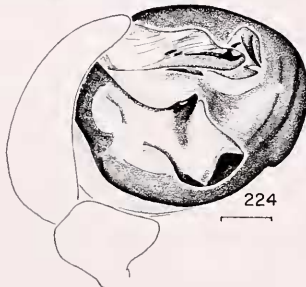
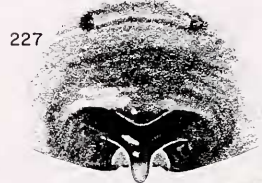
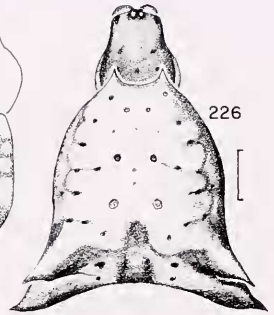
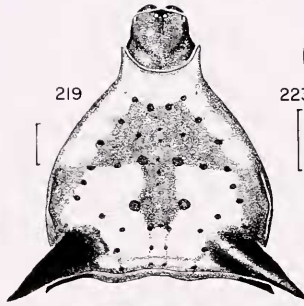
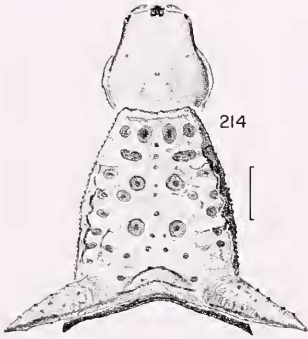
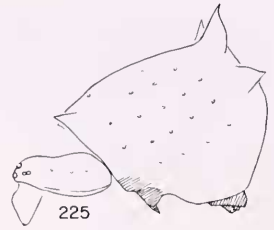
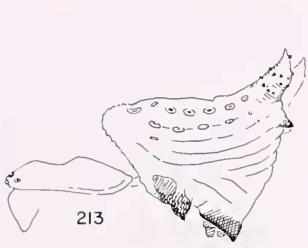
Figures 213–217. *Micrathena saccata* (C. L. Koch) (Trinidad), female. 213. Lateral. 214. Dorsal. 215. Epigynum, ventral. 216. Epigynum, posterior. 217. Epigynum, lateral.

Figures 218–224. *Micrathena cubana* Bryant, 218–222. Female. 218. Lateral. 219. Dorsal. 220. Epigynum, ventral. 221. Epigynum, posterior. 222. Epigynum, lateral. 223, 224. Male. 223. Dorsal. 224. Left palpus, mesal.

Figures 225–229. *Micrathena similis* Bryant, female. 225. Lateral. 226. Dorsal. 227. Epigynum, ventral. 228. Epigynum, posterior. 229. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 213, 214, 218, 219, 223, 225, 226, 1.0 mm.





Sept. 1972, ♀ (L. F. Armas, CASH); San Blas, ♀ (MCZ). *Pinar del Río*. San Vicente, ♀ (AMNH); Viñales, ♀ (AMNH); Candelaria, 2♀ (MCZ). *Villa Clara*. Vega Alta, ♀ (CUC); Topes de Collantes, ♀ (AMNH).

*Micrathena similis* Bryant  
Figures 225–229; Map 4

*Micrathena similis* Bryant, 1945: 45, figs. 8, 43, 44, ♀. Female holotype from Puerto Plata, Dominican Republic (MCZ), examined. Chickering, 1964: 279, figs. 68–71, ♀.

*Description.* Female holotype. Carapace brown with light brown rim. Sternum, legs brown. Dorsum of abdomen white, sides and venter black. Carapace with three pairs of dimples (Figs. 225, 226). Total length, 5.5 mm. Carapace, 2.2 mm long, 1.8 mm wide. First femur, 1.8 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.4 mm. Second patella and tibia, 1.8 mm; third, 1.1 mm. Fourth femur, 2.3 mm; patella and tibia, 1.7 mm; metatarsus, 1.3 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 5.1 to 5.5 mm. The holotype has the dorsum of the abdomen white; that of the paratype is black like that of some *M. mitrata*.

*Note.* The male is unknown.

*Diagnosis.* The female differs from most Florida *M. mitrata* by having an anterior pair of humps overhanging the carapace (Fig. 226). It differs from *M. cubana* by the differently shaped abdomen and the different markings (Fig. 226).

*Distribution.* Hispaniola (Map 4).

*Records.* DOMINICAN REPUBLIC:

*Prov. Puerto Plata.* Mt. Diego de Ocampo, North Range, 900–1,200 m, July 1938, ♀ (P. J. Darlington, MCZ). *Barahona.* Valle de Polo, 700–850 m, 18 Aug. 1935, ♀ (W. G. Hassler, AMNH).

*Micrathena coroico* new species  
Figures 230–234; Map 5

*Holotype.* Female from Coroico, Dept. La Paz, Bolivia (NMW). The specific name is a noun in apposition after the type locality.

*Description.* Female. Carapace light orange with median and two lateral darker streaks. Labium, endites, sternum blackish brown. Coxae very light, distal leg articles light orange. Dorsum of abdomen whitish with dark sclerotized spots and tips of spines black (Fig. 231); venter with book-lung covers dark brown, otherwise mottled black and white. Carapace with three pairs of indistinct dimples indicated by darker streaks; thorax high (Fig. 231), with distinct thoracic depression. Posterior median eyes 1.2 diameters of anterior medians; laterals slightly smaller than anterior median eyes. Abdomen with one pair of spines overhanging carapace and two posterior pairs (Fig. 231). Total length, 10.4 mm. Carapace, 3.7 mm long, 3.0 mm wide. First femur, 4.1 mm; patella and tibia, 4.2 mm; metatarsus, 2.9 mm; tarsus, 1.2 mm. Second patella and tibia, 3.8 mm; third, 2.0 mm. Fourth femur, 5.0 mm; patella and tibia, 4.2 mm; metatarsus, 3.2 mm; tarsus, 1.2 mm.

*Diagnosis.* *Micrathena coroico* differs from *M. macfarlanei* and other similar species by having no lateral spines (Figs. 230, 231).

*Micrathena crassispinina* (C. L. Koch)  
Figures 235–241; Map 5

*Acrosoma crassispinum* C. L. Koch, 1836: 55, fig. 209, ♀. Female from America, lost.

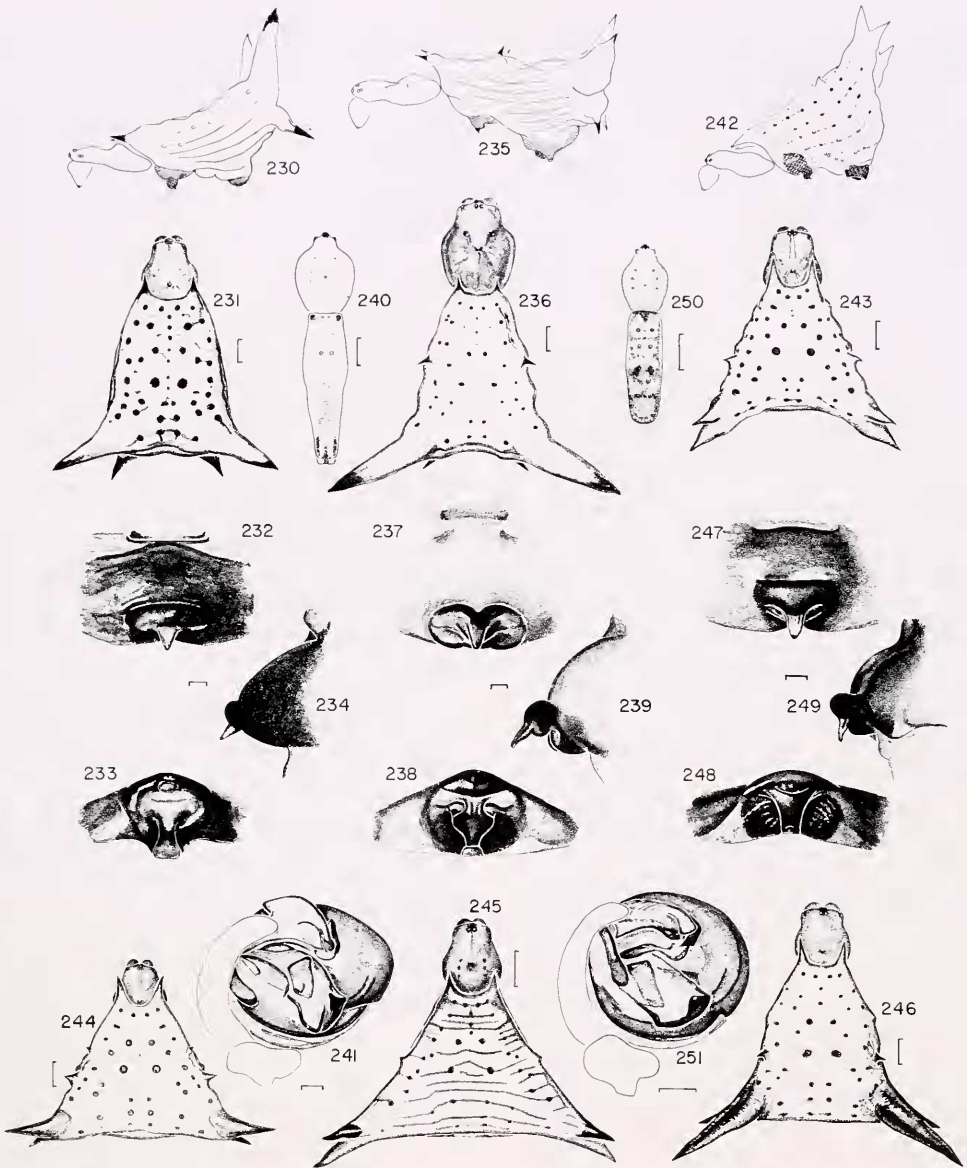
*Micrathena bergi* Simon, 1901: 121. Female from Chaco, Argentina (MNHN), lost. NEW SYNONYMY.

*Micrathena spinosa*:—Mello-Leitão, 1939: 72, figs. 54, 55, ♀ (misidentification).

*Micrathena crassispinina*:—Roewer, 1942: 956. Bonnet, 1957: 2864.

*Synonymy.* This species best fits Koch's original description and the illustration of a pinned specimen. Simon's description of *M. bergi*, the type of which is lost, also fits this species.

*Description.* Female. Carapace, sternum, legs orange. Abdomen white with tips of spines black. Carapace with a deep dimple on each side behind head; thorax high; rim indistinct but present. Abdomen subtriangular with four pairs of spines



Figures 230–234. *Micrathena coroico* n. sp., female. 230. Lateral. 231. Dorsal. 232. Epigynum, ventral. 233. Epigynum, posterior. 234. Epigynum, lateral.

Figures 235–241. *Micrathena crassispina* (C. L. Koch). 235–239. Female. 235. Lateral. 236. Dorsal. 237. Epigynum, ventral. 238. Epigynum, posterior. 239. Epigynum, lateral. 240, 241. Male. 240. Dorsum. 241. Left palpus, mesal.

Figures 242–251. *Micrathena lucasi* (Keyserling). 242–249. Female. 242. Lateral. 243–246. Dorsal. 243. (Lectotype, Bogotá). 244. (Lectotype, *M. acutospina*, Bogotá). 245. (Dept. Junin, Peru). 246. (Boquete, Panamá). 247. Epigynum, ventral. 248. Epigynum, posterior. 249. Epigynum, lateral. 250, 251. Male. 250. Dorsal. 251. Palpus, mesal.

Scale lines. 0.1 mm, except Figures 230, 231, 235, 236, 240, 242–246, 250, 1.0 mm.

(Figs. 235, 236). Total length, 11.5 mm. Carapace, 4.3 mm long, 3.5 mm wide. First femur, 4.8 mm; patella and tibia, 4.7 mm; metatarsus, 3.4 mm; tarsus, 1.4 mm. Second patella and tibia, 4.2 mm; third, 2.6 mm. Fourth femur, 5.8 mm; patella and tibia, 4.7 mm; metatarsus, 3.4 mm; tarsus, 1.3 mm.

Male. Carapace orange, sides brown. Sternum light orange, legs orange. Dorsum of abdomen with anterolateral black patches and posterior dark marks; venter with book-lungs dark, no pigment in midline; black on sides; black around spinnerets and posterior to spinnerets. Carapace with three pairs of indistinct dimples and very distinct thoracic depression. Length of abdomen more than 3.5 times anterior width, narrowing behind (Fig. 240). First coxa with hook, second femur with groove. Total length, 8.2 mm. Carapace, 3.0 mm long, 2.3 mm wide. First femur, 2.9 mm; patella and tibia, 2.2 mm; metatarsus, 2.2 mm; tarsus, 0.9 mm. Second patella and tibia, 2.2 mm; third, 1.2 mm. Fourth femur, 3.3 mm; patella and tibia, 2.4 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm.

*Variation.* Females vary in total length from 9.4 to 11.5 mm, males from 7.7 to 8.6 mm. Females sometimes have a minute spine pair below the posterior pair of spines.

*Note.* Males have been collected with immature and adult females.

*Diagnosis.* *Micrathena crassispina* differs from *M. guanabara* by having one less pair of spines on the posterior of the abdomen, from *M. raimondi* and *M. miles* by having a pair of spines overhanging the carapace (Figs. 235, 236), and from all three by the shape of the posterior face of the epigynum (Figs. 237–239).

*Distribution.* Southern Brazil, Bolivia to northern Argentina (Map 5).

*Records.* BRAZIL: *Est. Espírito Santo.* Rio São José, ♀ (MZSP). *Rio de Janeiro.* Niterói, 2♀ (MNRJ). *São Paulo.* São Paulo, 4♀ (MNRJ, BMNH, MZSP); Boracéia, ♀ (MZSP). *Paraná.* Curitiba, ♀ (MZSP); Banhado, ♀ (MZSP). *Santa Catarina.* Serra Geral, ♀ (ZMB); Nova Teutonia, ♀ (CAS);

Lagoa, ♀ (IBSP); Blumenau, ♀ (NMW). *Rio Grande do Sul.* Guarani, ♀ (AMNH); Pelotas, ♀ (AMNH); Triunfo, 4♀, 3♂ (FZRS); Montenegro, 3♂ (FZRS); Viamao, 4♀ (FZRS); São Francisco de Paula, ♀ (FZRS); Garruchos, São Borja, ♂ (FZRS); Passo Fundo, 6♀ (IBSP). BOLIVIA: *Dept. Potosí.* Cornaca, ♀ (MCZ). PARAGUAY: 2♀ (NHMB, BMNH). ARGENTINA: *Prov. Misiones.* Puerto Aguirre, ♀ (MULP); Pindpoy, ♀ (MULP); San Ignacio, ♀ (MULP); Santa Maria, ♀ (MACN), 8♀, 3♂ (MACN); Santa Ana, 2♀ (MACN); Punto Tabay, 4♀ (MACN); Eldorado, ♀ (IMLT); Monteagudo, 26♀, 10 imm. (MACN).

### *Micrathena lucasi* (Keyserling) Figures 242–251; Map 5

*Acrosoma lucasi* Keyserling, 1863: 68, pl. 2, fig. 1, ♀. Female lectotype designated by Chickering, 1960c, and nine female, two juvenile paralectotypes from Bogotá, Colombia (BMNH), examined. 1892: 27, pl. 1, fig. 24.

*Acrosoma acutospinum* Keyserling, 1863: 69, pl. 2, fig. 3, ♀. Female lectotype and four female paralectotypes from Santa Fé de Bogota, N. Granada [Bogotá, Colombia] (BMNH), designated by Chickering, 1960c, examined; 1892: 26, pl. 1, fig. 23, ♀. NEW SYNONYMY.

*Acrosoma occidentalis* Taczanowski, 1879: 111, pl. 1, fig. 28, ♀. Three female syntypes from Amable María [Junín], Peru (PAN), examined. NEW SYNONYMY.

*Acrosoma trapa* Gétaz, 1893: 105. Three females from Buenos Aires [Prov. Puntarenas], Costa Rica, lost. NEW SYNONYMY.

*Micrathena inaequalis* F. P.-Cambridge, 1904: 535, pl. 50, fig. 20, ♀. Four female syntypes from Volcán de Fuego [14°29'N, 90°53'W], Guatemala (BMNH), examined. Reimoser, 1917: 116. Roewer 1942: 959. Bonnet, 1957: 2870. Chickering, 1961: 427, figs. 89–93, ♀. NEW SYNONYMY.

*Micrathena joinvillicola* Strand, 1915: 121. Juvenile holotype from Joinville, Santa Catarina, Brazil (SMF), examined. NEW SYNONYMY.

*Micrathena occidentalis*.—Reimoser, 1917: 112, pl. 6, fig. 16, ♀. Roewer, 1942: 960. Bonnet, 1957: 2873.

*Micrathena acutospina*.—Reimoser, 1917: 115. Roewer, 1942: 953. Bonnet, 1957: 2861. Chickering, 1960c: 66, figs. 1–3, ♀.

*Micrathena lucasi*.—Reimoser, 1917: 117. Roewer, 1942: 959. Bonnet, 1957: 2871. Chickering, 1960c: 82, figs. 63–65.

*Synonymy.* Keyserling wrote that he had only one specimen of *M. acutospina*. Others may have been added to the vial

at a later time. *Micrathena lucasi* and *M. acutospina* were described by Keyserling at the same time; the syntypes of the two names differ: *M. acutospina* (Fig. 244) has an additional pair of denticles anterior on the sides which *M. lucasi* lacks (Fig. 243). There are also slight differences in proportions and swellings of the posterior view of the epigyna and internal genitalia. Many other specimens from various collections seem to be intermediate, in both the posterior view of the epigynum and the presence or absence of the denticle. Some specimens have a slight hump in its place; others a denticle only on one side. Perhaps the two original collections of Keyserling, both allegedly from Bogotá, came from different localities. In the early 19th century Bogotá was a trading center for natural history specimens, and the specimens may have been bought rather than collected there.

*Micrathena occidentalis* differs by having a relatively wide abdomen with transverse stripes (Fig. 245). The thorax is high, the dimples more distinct (Figs. 245), and the lobe of the epigynum blunter. There are only a few specimens in collections resembling the types: Villavicencio, Colombia; S of Santo Domingo, Ecuador and some from southern Brazil. One female from Villavicencio had an asymmetrical abdomen, wider on one side than the other. Finding the males that belong with the striped females may indicate whether or not this is a distinct species.

Gétaz' description and measurements of *Acrosoma trapa* fit this species and not others. Gétaz did not notice the tiny spines on the sides of the abdomen.

*Micrathena inaequalis* types are close to those of *M. lucasi* and without doubt the same species; the type of *M. joinvillicola* is an immature.

**Description.** Female lectotype of *M. lucasi*. Carapace, legs, sternum brown. Dorsum of abdomen whitish; posterolateral spines with some black pigment; sides and venter with some gray marks. Epigynum and ring around spinnerets brown. Carapace with three pairs of indistinct

dimples and a round thoracic depression. Abdomen with eight spines, the posterolaterals subequal in size (Figs. 242, 243). Total length, 6.8 mm. Carapace, 2.7 mm long, 2.2 mm wide. First femur, 2.5 mm; patella and tibia, 2.6 mm; metatarsus, 1.8 mm; tarsus, 0.6 mm. Second patella and tibia, 2.4 mm; third, 1.4 mm. Fourth femur, 2.7 mm; patella and tibia, 2.4 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

Male from Dept. Valle, Colombia. Carapace brown, sides darker, grayish. Sternum blackish brown. Legs brown, femora darkest. Dorsum of abdomen with rim of black pigment around margin on yellow-brown background; sclerotized disks black; indications of two white transverse bands; venter black without marks. Carapace with faint dimples (Fig. 250). First coxa with hook, second femur with groove. Abdomen longer than wide, sides parallel, rounded behind (Fig. 250). Total length, 4.8 mm. Carapace, 2.0 mm long, 1.4 mm wide. First femur, 1.5 mm; patella and tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.6 mm. Second patella and tibia, 1.3 mm; third, 0.8 mm. Fourth femur, 1.7 mm; patella and tibia, 1.3 mm; metatarsus, 0.9 mm; tarsus, 0.6 mm.

**Variation.** Females of *M. lucasi* are extremely variable, ranging in total length from 5.4 to 8.3 mm. Males vary in total length from 4.5 to 4.8 mm. The thorax of some specimens is higher than in others, and the dimples more distinct (independent of the striped abdomen). Most specimens have the abdomen longer than wide to as long as wide, but there are some that have the abdomen much wider than long (Fig. 245). Some have the socket of the posterolateral spines extended (Fig. 246). One female from San José, Costa Rica had the ventral one of the double spines reduced to a large denticle (perhaps it belonged to a different species).

**Note.** One collection had a large series of males and females, another a male and a female collected together. Late immature stages have an abdomen like the adult.

**Diagnosis.** The eight-spined female (sometimes an additional pair of lateral

denticles is present) differs from *M. crassispina*, which also has eight spines, by the first pair overhanging the carapace being usually white, and by the third and fourth pair having a common socket (Figs. 242–246). The T-shaped epigynum usually has a narrow, light colored lobe (Fig. 247). In posterior view there is a swelling in the throat, often lighter colored and continuing dorsally in the middle. It is bordered on each side by a heavier, sclerotized area, sometimes dark colored (Fig. 248).

Males differ from others by the sclerotized plate on the proximal end of the median apophysis, the terminal apophysis having a wide overhanging appendage, and by the sclerotized conductor visible behind the tip of the embolus and terminal apophysis (Fig. 251).

*Natural History.* *Micrathena lucasi* is a montane species occurring 1,000 to 2,300 m elevation in Mexico, in the mountains of Panama, and at higher elevations through Colombia to Peru. It is found in forests, with one record from a paramo in the Sierra de Santa Marta.

*Distribution.* Mexico to southern Brazil (Map 5).

*Records.* MEXICO: *Est. Veracruz.* Volcán San Martín, nr. San Andrés Tuxtla, 1,000 m, July 1953, ♀ (C. J. Goodnight, AMNH). *Oaxaca.* Yelagago, 2,300 m, 1963, ♀. *Chiapas.* Cacahuatán, 1,200–1,500 m, 2♀ (AMNH); Finca “La Isle,” 2♀ (CAS). GUATEMALA: Chicacao, El Naranjo, ♀ (AMNH). COSTA RICA: *Alajuela Prov.* Est. Fabio Baudrit, 2♀ (MZCR). *Cartago.* Finca Sinfonía [9:50N, 83:05W], ♀ (AMNH); nr. Turrialba, 1,300 m, ♀ (MCZ), 3♀ (MZCR); Juan Viñas, ♀ (NMW). *San José.* San José, 1,100 m, ♀ (AMNH, MCZ); Ciudad Universitaria, ♀ (MZCR); Potorro, 1,600 m, 4♀ (MCZR). *Puntarenas.* San Vito, 2♀ (AMNH, MZSR). La Verbena, ♀ (MCZ); Monteverde, 2♀ (AMNH, MCZ). *Cartago.* San Isidro del General, 600–1,200 m (MCZ). PANAMA: *Prov. Chiriquí.* El Volcán, ♀ (AMNH), ♀, ♂ (MCZ); Boquete, ♀ (MCZ); La Fortuna dam site, 2♀ (MCZ). *Panamá.* El Valle, ♀ (MCZ); El Valle de Antón, ♀ (UPMI). VENEZUELA: *Est.*

*Monagas.* Caripito, ♀ (FSCA). *Aragua.* Maracay, ♀ (AMNH). COLOMBIA: *Dept. Magdalena.* Sierra Nevada de Santa Marta: San Pedro de la Sierra, 1,400 m, ♀ (MCZ), San Pedro, 1,100 m, 4♀ (JAK), Serra Nueva Granada, 1,700 m, ♀ (JAK), Donachui, 2♀ (JAK). *Cesar.* Sierra de Perijó, Socorpa Mission, 1,500–1,600 m, 2♀ (AMNH). *Antioquia.* Medellín, ♀ (MCZ); La Estrella, 2,100 m, ♀ (MCZ). *Boyacá.* Río Dpan, 850–950 m, ♀ (AMNH). *Cundinamarca.* Bogotá (MCZ); El Colegio, ♀ (CAS). *Meta.* Villavicencio, 2♀ (AMNH, CAS). *Valle.* Lago Calima, ♀ (MCZ); Cali, ♀ (CAS, MCZ); 90 km S of Cali, 1,700 m, ♀ (MCZ); Pichinda, 1,700 m, ♀, ♂ (MCZ); Yotoco, 2♂ (MCZ). *Cauca.* Piendamó, ♀ (MCZ); Popayán, ♀ (CAS). *Huila.* Inzá, 1,700 m, 2♀ (MCZ). ECUADOR: *Imbabura Prov.* Paramba, 2♀ (BMNH). *Pichincha.* 47 km S of Sto. Domingo, ♀ (MCZ). *Bolívar.* Balzapamba, 5♀ (AMNH), 11♀, 4 imm., 9♂ (AMNH), 700 m, ♂, 2 imm. (AMNH). PERU: *Dept. San Martín.* 20 km SE Moyobamba, June 1947, ♀ (AMNH). *Amazonas.* Santa Rosa, Río Chinchipe, 1,600 m, July 1947, ♀ (EPC). BRAZIL: *Est. Pará.* 3°10'S, 47°30'W, km 305 Rodovia Belém-Brasília, ♀ (MZSP). *Minas Gerais.* Viçosa, 2♀ (IBSP). *São Paulo.* Caraquatatuba, ♀ (MZSP); Ourinhos, ♀ (MZSP). *Santa Catarina.* ♀ (E. Reimoser, MCZ), 3♀ (NMW).

#### *Micrathena macfarlanei* Chickering Figures 252–260; Map 5

*Micrathena macfarlanei* Chickering, 1961: 430, figs. 99–102, ♀. Female holotype from Barro Colorado Island, Panama (MCZ), examined.

*Micrathena melloleitaoi* Archer, 1971: 157, fig. 6, ♀. Female holotype from Tingo María, Huánuco, Peru (AMNH), examined. NEW SYNONYMY.

*Description.* Female from Panama. Carapace light brown with darker streaks. Sternum black. Coxae and distal articles of legs light brown. Dorsum of abdomen white, tips of spines black; sides and venter with black marks. Carapace with indistinct light rim and one pair of shallow dimples in grooves between head and thorax. Thorax very high, with distinct tho-

racic mark (Fig. 253). Abdomen with five pairs of spines, the third very small, the fourth largest (Figs. 252, 253). Total length, 9.7 mm. Carapace, 3.8 mm long, 3.0 mm wide. First femur, 4.9 mm; patella and tibia, 4.8 mm; metatarsus, 3.7 mm; tarsus, 1.2 mm. Second patella and tibia, 4.3 mm; third, 2.4 mm. Fourth femur, 6.2 mm; patella and tibia, 5.2 mm; metatarsus, 4.1 mm; tarsus, 1.3 mm.

Male. Carapace orange, sides darker. Labium and endites orange, sternum shiny black. Coxae light orange, distal articles of legs orange. Dorsum of abdomen white and black (Fig. 258); venter with median longitudinal band on genital area, a line of indistinct black marks on each side, and black mark behind spinnerets, widest posteriorly. First coxa with hook. Abdomen rounded behind, sides almost parallel (Fig. 258). Total length, 4.3 mm. Carapace, 1.9 mm long, 1.5 mm wide. First femur, 1.7 mm; patella and tibia, 1.6 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 1.3 mm; third, 0.7 mm. Fourth femur, 1.9 mm; patella and tibia, 1.5 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm.

*Variation.* Females vary in total length from 8.2 to 10.6 mm. The small third pair of spines may be absent. The legs of females from Panama are longer than those of females from Peru: length of first patella-tibia in those from Panama is 1.6 times carapace width; in those from Peru about 1.4 times carapace width. Also, Peruvian specimens appear to be more sclerotized. They have some additional small sclerotized disks on the dorsum, and the light area on the posterior of the epigynum is smaller. The specimen from Bolivia has longer spines and the epigynum has a longer lobe.

*Note.* The male was not collected with the female, but came from an area where females have been collected (Huánuco Prov., Peru), and has a similar black sternum. The association is uncertain.

*Diagnosis.* *Micrathena macfarlanei* can be separated from others of the *kirbyi* group by having eight to ten pairs of

spines, and by their arrangement (Figs. 252, 253). It differs from *M. armigera* and *M. kirbyi* by usually having a light patch on the posterior of the epigynum (Fig. 256). It differs from *M. armigera* by having endites, labium and sternum black, by having the second and third pairs of spines on the abdomen shorter (Figs. 252, 253), and by the longer, pointed lobe of the epigynum (Figs. 254, 255). It lacks the abdominal markings of *M. kirbyi*. The black sternum and the rugose, pointed base of the median apophysis of the palpus (Figs. 259, 260) separate the male from related species.

*Distribution.* Panama to Bolivia and southern Brazil (Map 5).

*Records.* PANAMA: *Panamá Prov.* Barro Colorado Isl., canal area, July 1936, ♀, June 1939, 2 imm. (A. M. Chickering, MCZ). PERU: *Dept. Huánuco.* Tingo María, 8 Oct. 1946, ♀ (J. C. Pallister, AMNH), 670 m, Dec. 1946, 6♀, 1 imm. (W. Weyrauch, AMNH); Cucharas, Feb.–Apr. 1954, 2♀, 1 imm. (F. Woytkowski, EPC); Aucayacu, 1 June 1967, ♂ (A. F. Archer, AMNH). BRAZIL: *Est. Amazonas.* mouth of Rio Embira and Rio Jurua, 1933, ♀ (B. A. Krukoff, AMNH). *Bahia.* Uruçuca, 27 Nov. 1977, ♀ (J. S. Santos, FZRS); Camacari, 14 Oct. 1978, ♀ (J. S. Santo, FZRS). *Rio de Janeiro.* Guitacazes, ♀ (M. Rosa, MNRJ). *São Paulo.* Diadema (Eldorado), 12 May 1962, ♂ (F. Lane, MZSP). BOLIVIA: *Dept. La Paz.* Coroico, ♀ (E. Reimoser, MCZ).

### *Micrathena armigera* (C. L. Koch)

Figures 261–265; Map 5

*Acrosoma armigera* C. L. Koch, 1838: 11, fig. 257, ♀. Female specimen from Brazil, from the collection of Jakob Sturm, probably in the ZSM, destroyed.

*Micrathena armigera*:—Roewer, 1942: 954. Bonnet, 1957: 2862 (not Reimoser, 1917).

*Name.* Koch's illustration shows a carapace perhaps with dimples, not present on specimens nor in Koch's description.

*Description.* Female. Carapace orange, sides of thorax dark brown. Sternum dark orange, coxae orange, legs dark orange.

Dorsum of abdomen whitish with orange spines and orange disks; venter with sclerotized areas dark orange. Carapace with rim and thoracic depression; no dimples. Abdomen with ten spines (Fig. 262). Total length, 11.0 mm. Carapace, 3.6 mm long, 3.0 mm wide. First femur, 4.2 mm; patella and tibia, 4.2 mm; metatarsus, 3.0 mm; tarsus, 1.2 mm. Second patella and tibia, 3.7 mm; third, 2.1 mm. Fourth femur, 5.0 mm; patella and tibia, 4.3 mm; metatarsus, 2.7 mm; tarsus, 1.3 mm.

*Diagnosis.* *Micrathena armigera* differs from *M. kirbyi* by its orange coloration and by lacking the black markings of the abdomen. The epigynum differs by having the transverse bar more posterior (Fig. 263). The epigynum differs from that of *M. macfarlanei* by having a tiny lobe (Fig. 263) with a transverse ridge behind, visible in posterior view (Fig. 264).

*Variation.* Females vary in total length from 10.5 to 12.2 mm.

*Note.* The male is unknown.

*Distribution.* Amazon area (Map 5).

*Records.* GUYANA: 1913, ♀ (Parrish, CUC). PERU: *Dept. Loreto*. Iquitos, ♀ (MCZ). BRAZIL: *Est. Pará*. Canindé, Feb.–May 1964, 2♀ (J. Carvalho, AMNH); km 305, Rodovia Belém-Brasília, 3°10'S, 47°30'W, ♀ (E. Dante, MZSP).

### *Micrathena kirbyi* (Perty)

Figures 266–270; Map 5

*Acrosoma kirbyi* Perty, 1833: 195, pl. 38, fig. 11.

Female holotype from Sebastianopolis [Rio de Janeiro] (ZSM), destroyed in the last war.

*Acrosoma oblonga* Taczanowski, 1872: 275, pl. 6, fig. 26, ♀. Female holotype from Cayenne, French Guiana (PAN), examined.

*Micrathena oblonga*:—Petrunkevitch, 1910: 213, pl. 21, figs. 12, 13, ♀.

*Micrathena kirbyi*:—Reimoser, 1917: 135, pl. 9, fig. 26, ♀. Roewer, 1942: 959. Bonnet, 1957: 2871.

*Description.* Female. Carapace, sternum, legs blackish brown, except coxae and femora, orange. Dorsum of abdomen boldly marked in black and white with transverse black marks; sides mostly black with some white marks (Figs. 266, 267); venter black with a white patch each side of epigastric area, two white spots on each side of spinnerets, and a median white spot behind spinnerets. Carapace with rim, a round thoracic mark; thorax high (Fig. 267). Sides of abdomen almost parallel, with ten spines (Fig. 267). Total length, 11.0 mm. Carapace, 3.9 mm long, 3.2 mm wide. First femur, 4.6 mm; patella and tibia, 4.7 mm; metatarsus, 3.5 mm; tarsus, 1.0 mm. Second patella and tibia, 4.1 mm; third, 2.4 mm. Fourth femur, 6.3 mm; patella and tibia, 5.1 mm; metatarsus, 4.2 mm; tarsus, 1.3 mm.

*Variation.* Females vary in total length from 8.3 to 12.9 mm. The tiny third pair of spines of the abdomen may be absent. The T-shaped tip of the epigynum is more variable in shape than that of other species.

*Note.* The male is unknown. Juvenile males have a black head, a black patch on each side of the carapace and on each side of the anterior of the abdomen. The sternum is black, coxae light; there is a median black band from anterior to posterior on the abdomen. The abdomen is as wide posteriorly as anteriorly, slightly convex on each side. Total length is 4.5 mm.

*Diagnosis.* *Micrathena kirbyi* is one of the largest species of the *M. kirbyi* group.

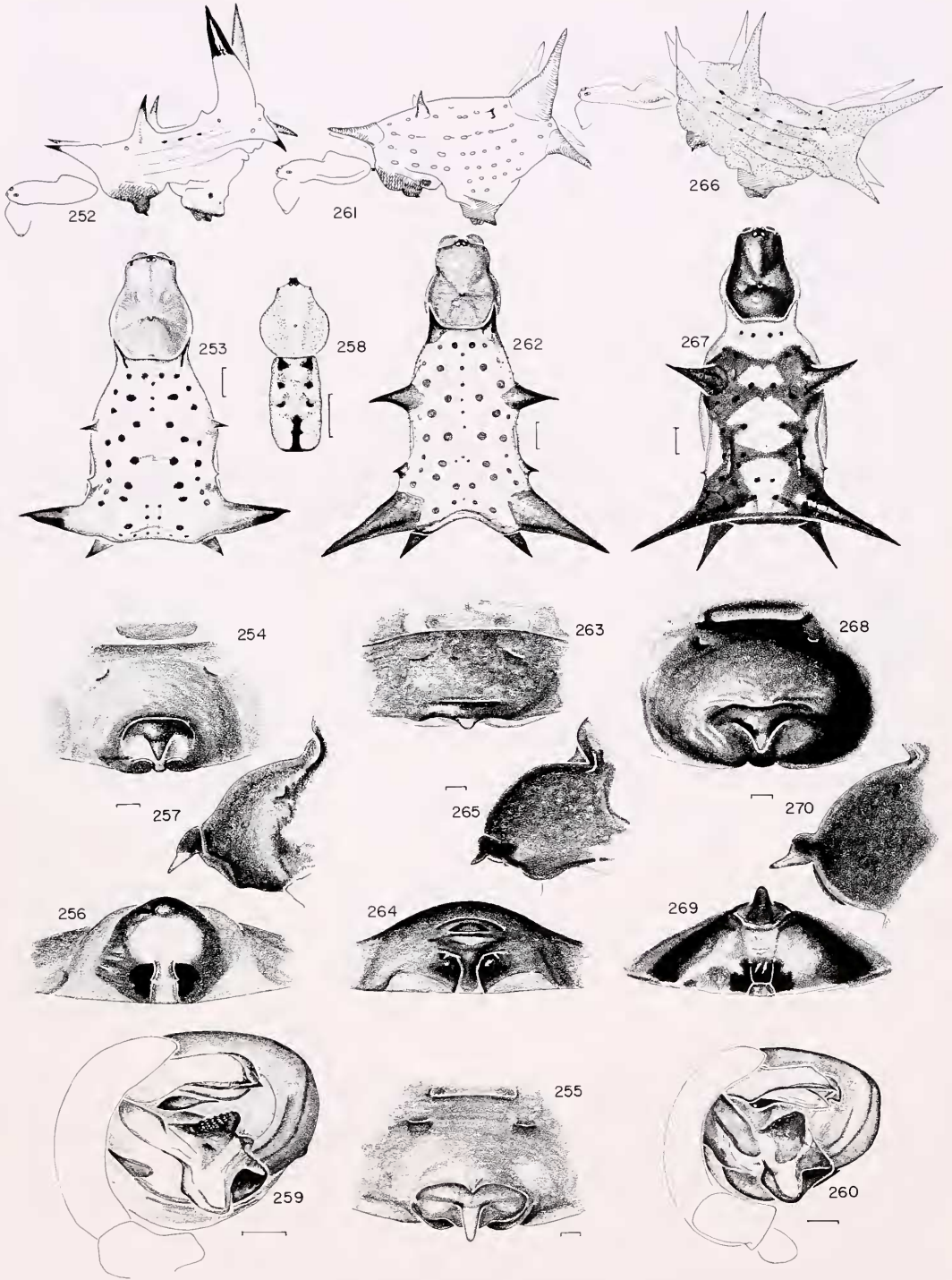
Figures 252–260. *Micrathena macfarlanei* Chickering. 252–257. Female. 252. Lateral. 253. Dorsal. 254, 255. Epigynum, ventral. 256. Epigynum, posterior. 257. Epigynum, lateral. 254, 256, 257. (Panama). 255. (Bolivia). 258–260. Male. 258. Dorsal. 259, 260. Left male palpus, mesal. 259. (Peru). 260. (São Paulo, Brazil).

Figures 261–265. *Micrathena armigera* (C. L. Koch), female. 261. Lateral. 262. Dorsal. 263. Epigynum, ventral. 264. Epigynum, posterior. 265. Epigynum, lateral.

Figures 266–270. *Micrathena kirbyi* (Perty), female. 266. Lateral. 267. Dorsal. 268. Epigynum, ventral. 269. Epigynum, posterior. 270. Epigynum, lateral.

*Scale lines.* 0.1 mm, except Figures 252, 253, 258, 261, 262, 266, 267, 1.0 mm.





It differs from *M. miles* by having a small pair of light spines overhanging the carapace (Fig. 267). It differs from the other eight- to ten-spined species by the bold markings and by having a light patch on the posterior of the epigynum dorsal to the lobe. The light area has a black patch on each side dorsally (Fig. 269).

*Natural History.* The species has been collected in forest.

*Distribution.* Amazon (Map 5).

*Records.* COLOMBIA; *Dept. Meta.* Villavicencio, ♀ (AMNH). *Caqueta.* Río Ortegua, 4♀ (AMNH). *Amazonas.* Letícia, ♀ (AMNH). *Vaupés.* Río Vaupés, ♀ (AMNH). VENEZUELA: *Est. Bolívar.* Kavanayen, ♀ (EMUC). GUYANA: *Essequibo Prov.* Rockstone, ♀ (AMNH); Kaie-teur, ♀ (AMNH); Kuyuwini Land, Kuyuwini River, ♀ (AMNH). Canister Falls, ♀ (BMNH). SURINAME: *Saramacca Prov.* Voltzberg-Raleighvallen Nature Reserve, ♀ (MCZ); Coppename Riv., 2♀ (AMNH). *Suriname.* Paramaribo, ♀ (AMNH), ♀ (NMW). Upper Suriname River, ♀ (BMNH). PERU: *Dept. Loreto.* upper Río Utoquinia, ♀ (AMNH). BRAZIL: *Est. Pará.* Belém, 12♀, 9 imm. (ZMSP, CAS, MEG, MCZ); Canindé, 17♀ (AMNH); 50 km E of Canindé, 2♀ (AMNH); Rio Gurupi, 2♀ (MZSP); Cachoeira, imm. (IBSP). *Amazonas.* mouth of Rio Embira, Rio Jurua, ♀ (MCZ); Manaus, ♀ (INPA), ♀ (FAM); Utin-ga, ♀ (MZSP). *Acre.* Rio Alto Purus, W. Sena Madureira, 2♀ (MCZ). *Rondonia.* Vila Murtinho, 5♀ (MCZ), 2♀ (MCZ). *Mato Grosso.* Aripuaná, ♀ (MCZ); Chapada dos Guimarães, ♀ (AMNH); Reserva Humboldt, ♀ (INPA).

*Micrathena lindenbergi* Mello-Leitão  
Figures 271–275; Map 5

*Micrathena lindenbergi* Mello-Leitão, 1940: 208. Female holotype from Colatina [Est. Espírito Santo, Brazil] (no. 55553 MNRJ), lost.

? *Micrathena parallela* Mello-Leitão, 1940: 209. Male holotype from Colatina, Santo Espírito (no. 58346, MNRJ), lost. Name preoccupied by *M. parallela* (O. P.-Cambridge). DOUBTFUL NEW SYNONYMY.

? *Micrathena sanctispiritus* Brignoli, 1983: 249. New name for *M. parallela* Mello-Leitão, name preoccupied. DOUBTFUL NEW SYNONYMY.

*Synonymy.* Six females from Goitacazes in the Museu Nacional, Rio de Janeiro had been labeled by Mello-Leitão as being this species.

Mello-Leitão did not illustrate *M. parallela*. The name was applied to a large male, 6.5 mm total length, having the abdomen three times as long as wide. It came from the same locality as *M. lindenbergi* and may have been collected with it.

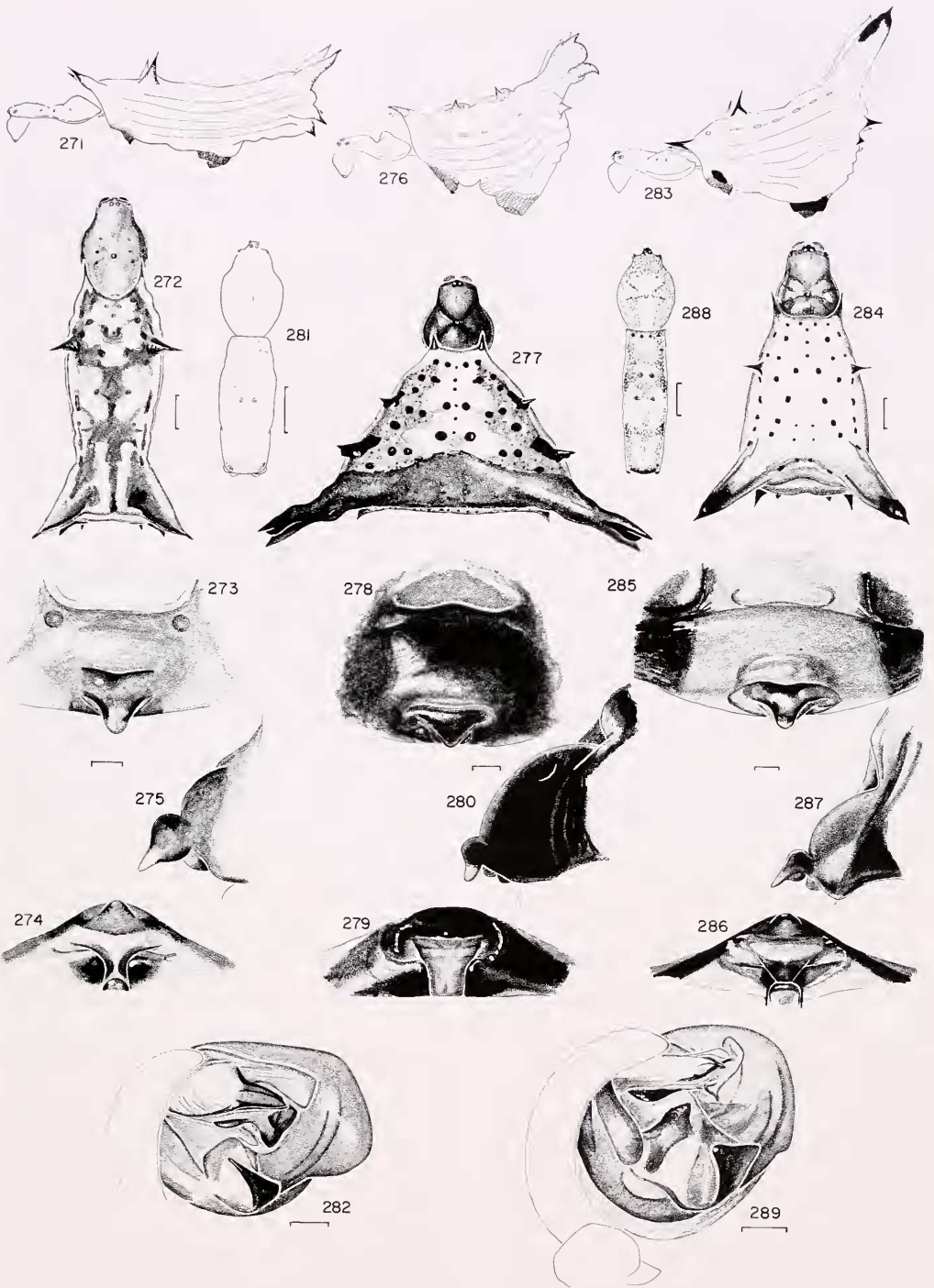
*Description.* Female. Carapace dark brown with some light orange posteromedially. Sternum orange. Coxae orange with some black spots. Legs brown. Dorsum of abdomen black and white; sides black; venter orange in middle, black on each side; some white pigment behind on each side of spinnerets. Carapace with three pairs of dimples, a distinct thoracic depression, narrow rim and high thorax (Figs. 271, 272). Abdomen with ten spines; abdomen length more than twice width. Total length, 9.6 mm. Carapace, 3.0 mm long, 2.4 mm wide. First femur, 3.3 mm; patella and tibia, 3.4 mm; metatarsus, 2.2 mm; tarsus, 1.2 mm. Second patella and tibia, 2.6 mm; third, 1.7 mm. Fourth fe-

Figures 271–275. *Micrathena lindenbergi* Mello-Leitão, female. 271. Lateral. 272. Dorsal. 273. Epigynum, ventral. 274. Epigynum, posterior. 275. Epigynum, lateral.

Figures 276–282. *Micrathena stuebeli* (Karsch). 276–280. Female. 276. Lateral. 277. Dorsal. 278. Epigynum, ventral. 279. Epigynum, posterior. 280. Epigynum lateral. 281, 282. Male. 281. Dorsal. 282. Left palpus, mesal.

Figures 283–289. *Micrathena guanabara* n. sp. 283–287. Female. 283. Lateral. 284. Dorsal. 285. Epigynum, ventral. 286. Epigynum, posterior. 287. Epigynum, lateral. 288, 289. Male. 288. Dorsal. 289. Male palpus, mesal.

Scale lines. 0.1 mm, except Figures 271, 272, 276, 277, 281, 283, 284, 288, 1.0 mm.



mur, 4.2 mm; patella and tibia, 3.3 mm; metatarsus, 2.4 mm; tarsus, 1.0 mm.

*Diagnosis.* *Micrathena lindenbergi* differs from *M. agriliformis* and *M. pupa* by the anterior spines on the abdomen (Figs. 271, 272). It differs from *M. guanabara* by the worm-shaped, posteriorly constricted abdomen (Fig. 272).

*Distribution.* Eastern Brazil (Map 5).

*Records.* BRAZIL: *Est. Bahia.* Camacari, 14 Oct. 1978, ♀ (J. S. Santos, FZRS). *Espírito Santo.* Rio São José, Sept. 1942, 4♀ (H. Soares, MZSP). *Rio de Janeiro.* Goitacazes, 6♀ (M. Rosa, MNRJ). *Minas Gerais.* Rio Matipó, Sept. 1919, ♀ (P. Fonseca, MZSP). *Paraná.* Engenheiro Lange, April 1946, ♀ (MZSP).

*Micrathena stuebeli* (Karsch)  
Figures 276–282; Map 5

*Acrosoma stübeli* Karsch, 1886: 340. Female holotype from Bogotá, Colombia (ZMB), examined.

*Micrathena spathulifera* Simon, 1895: 852, fig. 912, ♀. Female from Loja, Ecuador (no. 7831, MNHN), examined. First synonymized by Reimoser, 1917.

*Micrathena stübeli*:—Reimoser, 1917: 118, pl. 6, fig. 17, ♀. Roewer, 1942: 964.

*Micrathena stuebeli*:—Bonnet, 1957: 2879.

*Type.* The holotype of *M. stuebeli* has been pinned through the anterior part of the abdomen. It had been placed in alcohol before loaning, but is in poor condition, almost devoid of color.

*Description.* Female. Carapace, sternum dark brown. Legs dark brown, except for light coxae and proximal ends of femora. Abdomen white in middle of dorsum; black patches on sides; posterior sclerotized area dark brown; venter black. Sides of abdomen with some white patches on underside of folds. Carapace with very high thorax and a deep transverse groove (Fig. 276). Abdomen wider than long, with 12 spines, the fourth and fifth form a double spine, the anterior of which has a posterior lobe. Entire posterodorsal region of abdomen sclerotized (Figs. 276, 277). Total length, 8.8 mm. Carapace, 3.2 mm long, 2.7 mm wide. First femur, 3.1 mm; patella and tibia, 3.2 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm. Second patella and

tibia, 2.9 mm; third, 1.7 mm. Fourth femur, 3.4 mm; patella and tibia, 2.9 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm.

Male. Carapace dark brown; sternum light brown. Legs brown, first two femora darkest. Dorsum of abdomen brown with white pigment spots along sides and a pair in middle; venter black. Carapace slightly rugose with distinct thoracic depression; no dimples. First coxa with hook; second femur with groove. Sides of abdomen almost parallel, widest in middle; posterior edge with three folds (Fig. 281). Total length, 5.2 mm. Carapace, 2.3 mm long, 1.5 mm wide. First femur, 1.8 mm; patella and tibia, 1.8 mm; metatarsus, 1.1 mm; tarsus, 0.6 mm. Second patella and tibia, 1.6 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.6 mm; metatarsus, 1.2 mm.

*Variation.* Females vary in total length from 7.1 to 8.9 mm. The smallest specimens from Zamora had only the spines on the posterior of the abdomen sclerotized. The female from Ambato had lobes behind each one of the four lateral spines.

*Note.* The male has not been collected with the female, but was collected in an area where females have been found. The palpus is slightly expanded and transparent. The cymbium has been drawn in, for ease of comparison, as if the palp were contracted.

*Diagnosis.* *Micrathena stuebeli* female differs from *M. digitata* found in Brazil by having a pair of anterior spines overhanging the carapace (Figs. 276, 277), and by the posterior aspect of the epigynum (Fig. 279). It differs from others by the wide abdomen having a lobed spine (Fig. 277).

The male differs from others by having the distal margin of the median apophysis changed into a spine (Fig. 282).

*Distribution.* Colombia and Ecuador (Map 5).

*Records.* ECUADOR: *Prov. Pichincha.* Sierra Inca, 2♀ (NMW). *Napo.* Río Hollin, 600 m, Jan. 1985, ♀ (G. Moreion, MECN). *Tungurahua.* Ambato, 2♀ (AMNH); *Tungurahua,* 2,600 m, 6 May 1979, ♂ (W.

Clarke-MacIntyre, AMNH). *Morona Santiago*. nr. General Plaza (Limón), 1977, ♀ (N. Engler, MCZ). *Loja*. Zamora, 1,800–2,200 m, 28 Oct. 1977, ♀ (L. Peña, AMNH).

*Micrathena guanabara* new species  
Figures 283–289; Map 5

*Holotype*. Female and male paratype from Rio de Janeiro, Brazil, 29 Jan. 1945 (P. Wygodzinsky, no. 7932, MZSP). The specific name is a noun in apposition after Guanabara Bay.

*Description*. Female. Carapace dark brown and black with dark color emphasizing sculpturing, lightest in areas between dimples. Sternum orange. Coxae lighter orange; distal articles of legs orange-brown. Dorsum of abdomen white with black spines, except for large posterolateral spines, which are black distally; sclerotized spots orange-brown; venter whitish, with book-lung covers and ring around spinnerets black; white patches on sides. Carapace with distinct rim and median thoracic depression, and three pairs of very large dimples in grooves. Posterior median eyes slightly larger than others, which are subequal. Abdomen longer than wide, with ten spines: first pair overhanging carapace; third pair, posterolaterals, largest (Figs. 283, 284). Total length, 8.3 mm. Carapace, 3.2 mm long, 2.4 mm wide. First femur, 3.4 mm; patella and tibia, 3.6 mm; metatarsus, 2.5 mm; tarsus, 1.1 mm. Second patella and tibia, 3.1 mm; third, 2.0 mm. Fourth femur, 4.3 mm; patella and tibia, 3.5 mm; metatarsus, 2.9 mm; tarsus, 1.1 mm.

Male. Carapace black with two orange patches, a transverse one in front of thoracic depression, and a longitudinal one behind. Chelicerae black, sternum orange. Legs dusky orange. Dorsum of abdomen with white pigment on sides and gray pigment (Fig. 288); venter orange between black book-lung covers, orange behind and black on sides; black behind spinnerets with orange sides. Carapace with very distinct dimples and thoracic depression. Posterior median eyes 1.3 di-

ameters of anteriors; laterals 0.8 diameters of anterior median eyes. Coxal hook present. First patella and tibia with macrosetae. Abdomen rectangular, longer than wide (Fig. 288). Total length, 6.6 mm. Carapace, 2.4 mm long, 1.7 mm wide. First femur, 2.2 mm; patella and tibia, 2.2 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 1.8 mm; third, 1.1 mm. Fourth femur, 2.7 mm; patella and tibia, 2.2 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

*Variation*. Females vary in total length from 8.0 to 9.0 mm, males from 6.0 to 6.6 mm. The width and length of the lobe of the epigynum is slightly variable.

*Notes*. The holotype was collected with a male; the coloration indicates that they belong together.

There is a specimen of this species from Brazil in the Berlin Museum, originally pinned, which is marked "*M. crassispina*."

*Diagnosis*. This species differs from *M. crassispina* in having an additional pair of spines on the posterior slope of the abdomen (Figs. 283, 284). The large dimples and grooves of the carapace separate this species from others of this species group. The male differs from *M. lindenbergi* by having a long, rectangular abdomen, and by the distinctly shaped conductor (Fig. 289).

*Distribution*. State of Rio de Janeiro, Brazil (Map 5).

*Paratypes*. BRAZIL: *Est. Rio de Janeiro*. Ilha Grande, 4 Sept. 1944, ♀ (H. Sick, AMNH); Sumaré, Feb. 1946, ♀ (H. Sick, AMNH); Jacarépaguá, 2♀ (MNRJ); Niterói, ♀ (MNRJ); Rio de Janeiro, 26 May 1979, 2♀, ♂ (C. J. Becker, FZRS), ♀ (ZMK).

*Micrathena duodecimspinosa* (O. P.-Cambridge)  
Figures 290–303; Map 6

*Acrosoma 12-spinosum* O. P.-Cambridge, 1890: 63, pl. 8, fig. 12, ♀. Female holotype and 14 paratypes from Bugaba, Panama (BMNH), examined. Keyserling, 1892: 18, pl. 1, fig. 14. F. P.-Cambridge, 1904: 535, pl. 5, fig. 18, ♀.

*Micrathena duodecimspinosa*:—Reimoser, 1917: 108,

pl. 5, fig. 12, ♀. Roewer, 1942: 957. Bonnet, 1957: 2866. Chickering, 1961: 408, figs. 41–45, ♀ (not male).

*Micrathena subspinosa* F. P.-Cambridge, 1904: 535, pl. 51, fig. 17, ♀. Female holotype from Ayutla, Guatemala (BMNH), examined. Reimoser, 1917: 115. Roewer, 1942: 964. Bonnet, 1957: 2880. Chickering, 1961: 463, figs. 194–197. NEW SYNONYMY.

*Micrathena disjuncta* Chickering, 1961: 403, figs. 26–30, ♂. Male holotype from Barro Colorado Island, Panama (MCZ), examined. NEW SYNONYMY.

*Micrathena macilenta* Chickering, 1961: 432, figs. 103–109, ♂. Male holotype from Barro Colorado Island, Panama (MCZ), examined. NEW SYNONYMY.

*Synonymy.* The epigynum of the holotype of *A. duodecimspinosum* is weakly sclerotized, either just before or just after the last molt. It has not been illustrated here; the dorsum of the female has (Fig. 294).

Chickering was not certain that *M. subspinosa* was a separate species from *M. duodecimspinoso*. I believe they are the same, despite the drawn-out, triple posterolateral spines and the posteriormost spine being farther from the other two spines (Fig. 295).

*Micrathena disjuncta* and *M. macilenta* are the male of *M. duodecimspinoso*. Chickering illustrated and perhaps examined the two males from slightly different angles. Also, the type of *M. disjuncta* has just molted and is not sclerotized; the abdomen is shorter and wider than the sclerotized type of *M. macilenta*. Chickering thought that males he had collected in Boquete, Chiriquí Mountains belonged to *M. duodecimspinoso*. They are not this species, since no females have been collected in the mountains; they are *M. lucasi*.

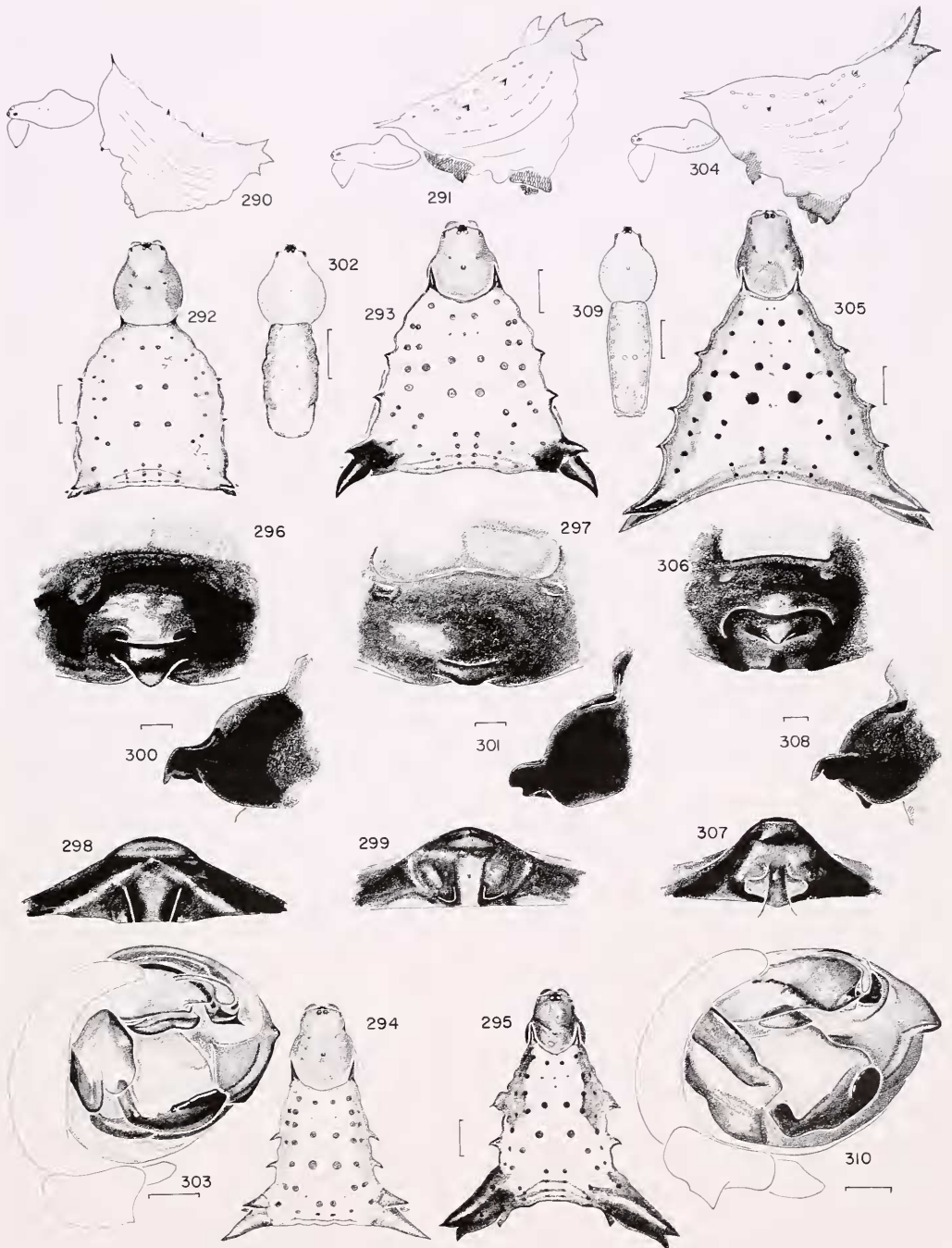
*Description.* Female. Carapace orange, brown on each side of thorax. Sternum,

legs brown. Dorsum of abdomen white in center, blackish on each side; anterior, posterior spines orange; venter dark brown with paired white spots, a large white patch on each side of spinnerets and white median band from behind spinnerets up posterior. Carapace with dimples and high thorax (Figs. 290–295). Total length, 6.2 mm. Carapace, 2.2 mm long, 1.9 mm wide. First femur, 2.3 mm; patella and tibia, 2.4 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 2.2 mm; third, 1.3 mm. Fourth femur, 2.6 mm; patella and tibia, 2.0 mm; metatarsus, 1.5 mm; tarsus, 0.6 mm.

Male holotype of *M. disjuncta*. Carapace yellow-white, black on each side. Sternum, legs yellow-white. Dorsum of abdomen white with black marks; sides black, venter gray. Carapace with thoracic mark. First and second legs have macrosetae. First coxa with hook, second femur with groove. Abdomen almost rectangular, very slightly lobed on sides (Fig. 302). Total length, 3.8 mm. Carapace, 1.7 mm long, 1.2 mm wide. First femur, 1.6 mm; patella and tibia, 1.6 mm; metatarsus, 1.0 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.7 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 4.9 to 7.6 mm. The carapace of females has one to three pairs of dimples. The abdomen always has 12 spines (one pair overhanging carapace, two pairs on sides, and three with a joint socket posterolaterally), but is quite variable in outline (Figs. 290–295). The transverse bar of the epigynum may lack a posterior median lobe; it may be broken off (Figs. 297, 299, 301).

*Note.* Males and females have been col-



Figures 304–310. *Micrathena parallela* (O. P.-Cambridge). 304–308. Female. 304. Lateral. 305. Dorsal. 306. Epigynum, ventral. 307. Epigynum, posterior. 308. Epigynum, lateral. 309, 310. Male. 309. Dorsal. 310. Palpus, mesal.  
 Scale lines. 0.1 mm, except Figures 290–295, 302, 304, 305, 309, 1.0 mm.

lected together on Barro Colorado Island, Panama canal area, and a male was found in Bugaba, the type locality of *M. duodecimspinosa*. The male is similar to the one of *M. plana*, a related species.

*Diagnosis.* This species is very similar to *M. plana*, but apparently differs by always having anterior edge of the transverse bar of the epigynum concave (Fig. 296, 297). The male differs by having a radix with an upper lobe (on cymbial margin left of center in Fig. 303).

*Distribution.* Guatemala to southern Colombia (Map 6).

*Records.* COSTA RICA: *San José Prov.* San José, ♀ (M. Valerio, MCZ); La Caja, San José, 1930, ♀ (Schmidt, NMW). *Puntarenas.* 4 km SW Rincón, March 1967, ♀; 2.5 km SW Rincón, March 1967, ♀ (OTS course, MCZ); Río Jesus María, 5♀ (Biolley, Tristan, MCZ). PANAMA: *Bocas de Toro Prov.* Bugaba, ♂ (Champion, BMNH). *Panamá.* Barro Colorado Island, Gatún Lake, many collections, ♀, ♂ (AMNH, MCZ, MZSP); France Field, Canal area, Aug. 1938, ♀ (A.M. Chickering, MCZ). COLOMBIA: *Dept. Nariño.* Barbacoas, 20 m, 20 March 1974, ♀ (W. Eberhard, MCZ).

*Micrathena parallela* (O. P.-Cambridge)  
Figures 304–310; Map 6

*Acrosoma parallela* O. P.-Cambridge, 1890: 60, pl. 8, fig. 15, ♂. Male lectotype, two male paralectotypes (and parts of a male paralectotype which is *M. duodecimspinosa*) from Bugaba, Panama (BMNH), examined. Keyserling, 1892: 6, pl. 1, fig. 12, ♂.

*Micrathena parallela*:—F. P.-Cambridge, 1904: 533, pl. 50, fig. 13, ♂. Roewer, 1942: 960. Bonnet, 1957: 2873. Chickering, 1961: 443, figs. 133–137, ♂.

*Micrathena serrata* F. P.-Cambridge, 1904: 534, pl. 50, fig. 19, ♀. Seventeen female syntypes from Volcán de Chiriquí, Panama (BMNH), examined. Reimoser, 1917: 114. Roewer, 1942: 963. Bonnet, 1957: 2877. Chickering, 1961: 455, figs. 169–173, ♀. NEW SYNONYMY.

*Synonymy.* *Micrathena serrata* is the female of *M. parallela*.

*Description.* Female from Panama. Carapace orange, gray on sides. Sternum

orange-brown. Legs brown. Dorsum of abdomen white, with a dark band on each side (Fig. 305); spines orange-brown; sides of abdomen dark with dorsoventral rows of white patches; venter dark. Carapace with high thorax and narrow rim, three pairs of small dimples and a median thoracic mark (Figs. 304, 305). Total length, 7.4 mm. Carapace, 2.4 mm long, 2.2 mm wide. First femur, 2.4 mm; patella and tibia, 2.6 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm. Second patella and tibia, 2.3 mm; third, 1.4 mm. Fourth femur, 2.7 mm; patella and tibia, 2.2 mm; metatarsus, 1.7 mm; tarsus, 0.6 mm.

Male from Panama. Carapace dark dusky orange, sides slightly darker. Sternum dark orange, legs dusky orange. Dorsum of abdomen whitish orange with five gray patches, four anterolateral and one posteromedian, all with indistinct outline; venter blackish. Sides of thorax slightly rugose, with a distinct round thoracic depression and indistinct tubercles. A hook on first coxa, a groove on second femur. Sides of abdomen nearly parallel, with two folds on posterior margin (Fig. 309). Total length, 5.2 mm. Carapace, 1.9 mm long, 1.5 mm wide. First femur, 1.7 mm; patella and tibia, 1.7 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm. Second patella and tibia, 1.4 mm; third, 0.9 mm. Fourth femur, 1.8 mm; patella and tibia, 1.4 mm; metatarsus, 1.1 mm.

*Variation.* Females vary in total length from 6.2 to 8.0 mm. The dimples on the female carapace may be indistinct. Sometimes there is an additional pair of spines between the second and third pair on the abdomen, giving the abdomen 16 spines. The spines on the posterior of the abdomen are usually minute.

*Note.* Four males were collected with an equal number of females by W. J. Gertsch at Volcán, Panama.

*Diagnosis.* This species has a distinct epigynum: the anterior margin of the transverse bar surrounds and frames the sides (Fig. 306). In posterior view there is a median dark septum with a semicircular



lateral groove on each side (Fig. 307). There are usually three teeth on the sides of the abdomen: a posterolateral double spine and a minute spine toward the middle on the posterior. The outline of the tegulum of the male palpus, with a lobe distally on the venter, is diagnostic (Fig. 310).

*Distribution.* Mountains of Costa Rica and Panama (Map 6).

*Records.* COSTA RICA: *San José Prov.* La Verbena, 2♀ (Tristan, MCZ); San Antonio de Escazú, 1,350 m, Oct. 1980, ♀ (W. Eberhard, MCZ). *Puntarenas.* Monteverde Forest Reserve, 1,580 m, 22 Nov. 1977, ♀ (C. L. Craig, MCZ), ♀ (C. W. Palmer, AMNH). PANAMA: *Chiriquí Prov.* Volcán, Aug. 1950, 9♀ (A. M. Chickering, MCZ), Feb. 1936, 4♀, 4♂, 13 imm. (W. J. Gertsch, AMNH); Cerro Punta, June 1962, 2♀ (R. Zweifel, AMNH).

### *Micrathena plana* (C. L. Koch)

Figures 311–325; Map 6

*Acrosoma planum* C. L. Koch, 1836: 81, fig. 228, ♀. Female holotype from Brazil (ZSM), destroyed in the last war.

? *Plectana alata* Walckenaer, 1841: 193. Female from Santa Catarina, Brazil, lost. NEW DOUBTFUL SYNONYMY.

*Acrosoma maronica* Taczanowski, 1873: 272, pl. 6, fig. 24, ♀. Two female syntypes from Saint Laurent de Maroni, French Guyana (PAN), examined. NEW SYNONYMY.

*Micrathena pubescens*:—Simon, 1895: 854. Male paralectotype, not female lectotype.

*Micrathena maronica*:—Reimoser, 1917: 106. Roewer, 1942: 960. Bonnet, 1957: 2871.

*Micrathena plana*:—Reimoser, 1917: 109. Roewer, 1942: 961. Bonnet, 1957: 2874.

*Micrathena nitida* Chickering, 1964: 272, figs. 51–56, ♂. Male holotype from near Port of Spain, Trinidad, Lesser Antilles (MCZ), examined. NEW SYNONYMY.

*Synonymy.* Taczanowski named the species *A. maronica*, and Chickering described the male as *M. nitida*. *Plectana alata* Walckenaer might be this species; it has two posterior lobes and twelve spines.

*Description.* Female. Carapace, legs olive brown. Sternum dark brown. Dorsum of abdomen white with gray band on each

side; sides and venter dark with pairs of white patches. Carapace with an indistinct pair of dimples, a thoracic mark and high thorax; lacking rim. Abdomen with two anterior spines, two thorns on each side of dorsum with a swelling in between, and a posterolateral spine with three tips, the middle one largest (Figs. 311–314). Total length, 5.5 mm. Carapace, 2.2 mm long, 1.8 mm wide. First femur, 2.2 mm; patella and tibia, 2.2 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.4 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

Male. Color like female. Carapace with median thoracic mark; without rim or dimples. First coxa with small lateral hook; groove on second femur. First and second legs with macrosetae. Abdomen longer than wide, narrowing posteriorly, with small fold below each posterior lateral tip (Fig. 324). Total length, 4.5 mm. Carapace, 1.7 mm long, 1.4 mm wide. First femur, 1.4 mm; patella and tibia, 1.3 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm. Second patella and tibia, 1.0 mm; third, 0.7 mm. Fourth femur, 1.5 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 4.3 to 6.1 mm, males from 3.8 to 5.4 mm. Some females have a minute pair of teeth on the posterior face of the abdomen; some have minute denticles in front of the first lateral spines. A single specimen from the Virgin Islands had an almost flat, sclerotized plate in place of the lateral spines. Some females and a male from Venezuela have the dorsum of the abdomen all black. In some females the convex anterior edge of the transverse bar of the epigynum has disappeared (Fig. 317). In some the transverse bar has a lobe (Fig. 315); in others it has almost disappeared. Some females might belong to other similar, related species. Also, the females which have some characteristics of *M. triangularis* (see below) suggest that the species hybridize.

*Note.* Males and females have been collected together in Colombia, Venezuela, Ecuador, and Brazil.

*Diagnosis.* The female differs from *M. triangularis* and other species with 12 to 16 (rare) spines by having a convex anterior edge on the swollen transverse bar, and by its diminished (or absent) posterior lobe (Figs. 315–317). Females differ from *M. triangularis* by the abdomen usually having only two spines on the sides, separated by a lobe (Fig. 312). The related *M. duodecimspinosa* has the anterior margin of the transverse bar concave. The narrowed posterior of the male abdomen (Fig. 324) is diagnostic, as is the curved embolus visible above the terminal apophysis (Fig. 325). The terminal apophysis has an appendage which hangs over the conductor (Fig. 325).

*Natural History.* The species has been found in gallery forest in Mato Grosso and is found at low elevations.

*Distribution.* Panama, Virgin islands, Trinidad, Colombia to Argentina (Map 6).

*Records.* PANAMA: *Chiriquí Prov.* David, Dec. 1946, ♂ (N. L. H. Krauss, AMNH). VIRGIN ISLANDS: *St. John.* Bordeaux Mtn., 17 Dec. 1965, ♀ (Isl. Project staff, AMNH). TRINIDAD: common, ♀, ♂ (AMNH, MCZ). VENEZUELA: *Est. Delta-Amacuro.* Río Orinoco delta, ♀ (MCZ). *Monagas.* Caripito, ♀ (AMNH). *Miranda.* Maracay, 2♀ (MCZ). *Carabobo.* San Esteban, 2♀, ♂♂ (CUC). GUYANA: *Essequibo Co.* nr. Tacuto, 2♀ (AMNH); Isherton, ♀ (AMNH). SURINAME: *Suriname Prov.* Paramaribo, ♂ (AMNH). *Marowijn.* Langaman, ♀ (MNH). FRENCH GUIANA: Cayenne, ♀ (MCZ). COLOM-

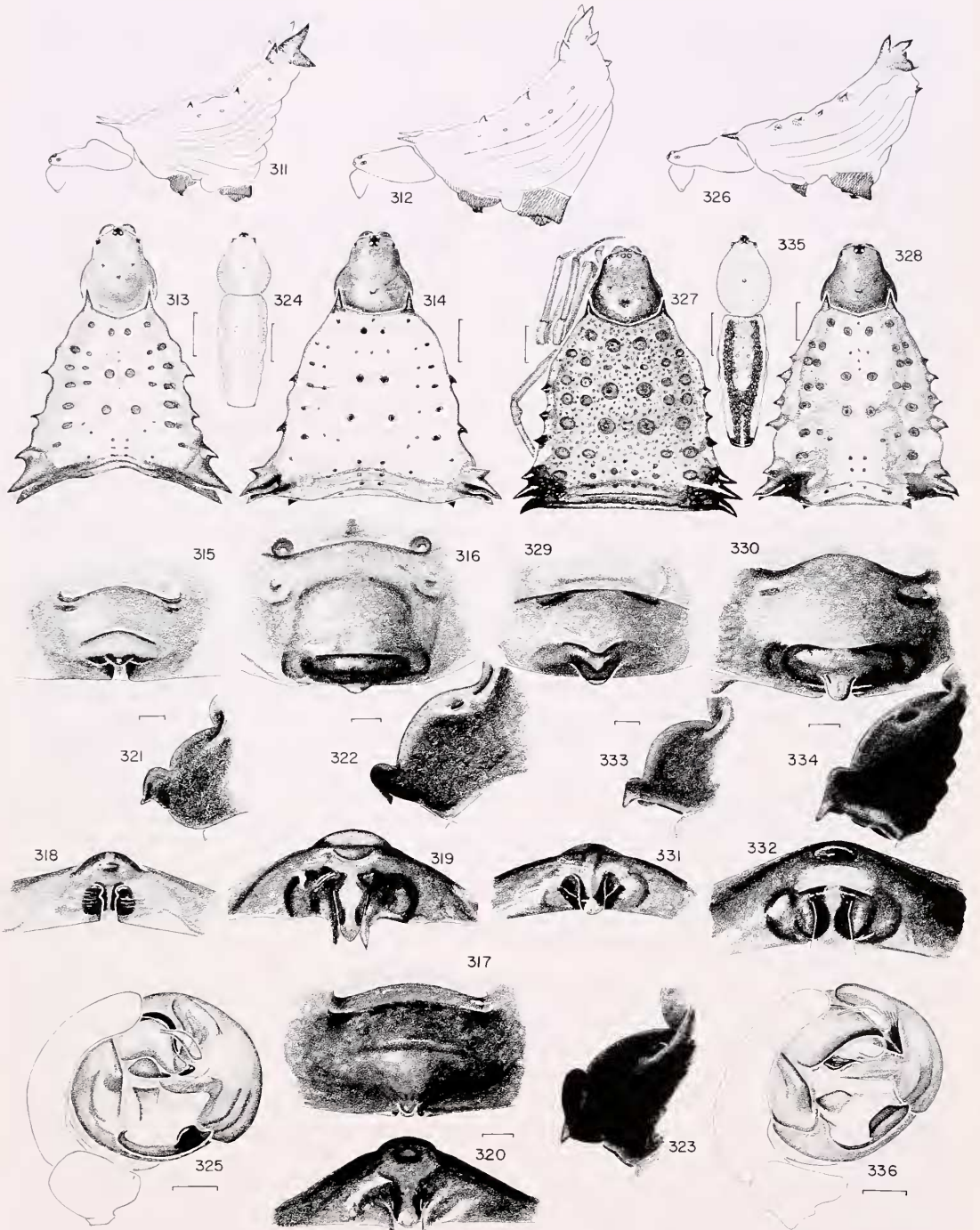
BIA: *Dept. Chocó.* Quibdó, ♀ (IMLT). *Meta.* 20 km N Río Muco, “Carimagua,” ♀, ♂ (MCZ); 15 km SW Puerto Lopez, ♀, ♂ (MCZ); 20 km S El Porvenir, ♀ (MCZ). Villavicencio, ♀ (AMNH). *Valle.* Cali, ♂ (MCZ); nr. Cali, 1,000 m, ♂ (MCZ); 50 km S Buenaventura, ♀ (MCZ); 28 km E Buenaventura, ♀ (MCZ). *Huila.* 10 km E Leticia, ♂ (MCZ). *Cauca.* NW Guapi, 100 m, ♀ (MCZ). *Caqueta.* Río Orteguzaza, ♀ (AMNH). ECUADOR: *Prov. Pichincha.* 16 km SE San Domingo, Tinandia (?), ♂ (MCZ); 10 km W Santo Domingo de los Colorados, ♀ (CAS); km 113 vía Pto. Quito, ♀ (MECN). *Napo.* Tayos Santiago, ♀ (MCZ); Tarapuy, 2♀ (MECN). *Guayas.* Milagro, ♀, ♂ (EPC). *Los Ríos.* 50 km E Quevado, ♀ (CAS); Juan Montalvo, ♀ (AMNH). *El Oro.* Río Santa Rosa, 64 km S of Ista Rosa, ♂ (EPC). PERU: *Dept. Amazonas.* Río Alto Marañón, betw. Río Campa and Río Nieva, ♀ (AMNH). *Loreto.* Iquitos, ♀ (MCZ); Río Napo, ♀ (MCZ). *Huánuco.* 69 km E Tingo María, ♀ (CAS); Tingo María, 15♀, 3♂ (CAS, AMNH); Santa Teresa, ♀ (EPC); Cucharas, ♂ (EPC); Divisoria, ♀ (AMNH). *Pasco.* Puerto Bermúdez, ♀ (CUC). *Junín.* Estancia Naranjal San Ramon, 1,000 m, 2♀ (AMNH). BRAZIL: *Est. Amazonas.* Tefé, 2♀ (MCZ, BMNH); Alto Solimões, ♀, ♂ (FZRS); Rio Negro, Umarituba, ♀ (NRS); Rio Autas, Cururuzinho, ♀ (NRS); Lagode Coarí, ♀ (NRS). *Pará.* Belém, ♀ (MCZ); Canindé, ♀ (AMNH); Jacaré-Acanga, ♀ (AMNH); Santarém, Monte Alegre, ♀ (BMNH). *Rondônia.* Abuña, ♀, ♂ (MCZ); Pôrto Velho, ♀ (MCZ). *Mato Grosso.* 260 km N Xavantina, ♀ (MCZ); Chavantina, ♀ (MSP). *Goiás.* Corumbá, ♀ (MZSP). *Bahia.* Iguassú, ♀

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Figures 311–325. *Micrathena plana* (C. L. Koch). 311–323. Female. 311, 312. Lateral. 313, 314. Dorsal. 315–317. Epigynum, dorsal. 318–320. Epigynum, posterior. 321–323. Epigynum, lateral. 311, 313, 315, 318, 321. (Dept. Meta, Colombia). 312, 314, 317, 320, 323. (Dept. Junín, Peru). 316, 319, 322. (Est. Mato Grosso, Brazil). 324, 325. Male. 324. Dorsal. 325. Left palpus, mesal.

Figures 326–336. *Micrathena triangularis* (C. L. Koch). 326–334. Female. 326. Lateral. 327, 328. Dorsal. 329, 330. Epigynum, ventral. 331, 332. Epigynum, posterior. 333, 334. Epigynum, lateral. 326, 328, 330, 332, 334. (Suriname). 327. (Cayenne). 329, 331, 333. (Belém, Brazil). 335–336. Male. 335. Dorsal. 336. Palpus, mesal.

*Scale lines.* 0.1 mm, except Figures 311–314, 324, 326–328, 335, 1.0 mm.



(NRS). *Minas Gerais*. Belo Horizonte, ♂ (CUC). *Espírito Santo*. Colatina, ♀ (MNRJ). *Rio de Janeiro*. Angra dos Reis, ♀ (MZSP). *São Paulo*. Batatais, ♀ (MZSP); Boa Esperanjo do Sul, 3♀ (MZSP); Nova Europa, 2♀, ♂ (MZSP); Cosmopolis, ♀ (CAS); Rio Claro, ♀ (FAM); Guatapar, ♂ (MZSP); Tabatinga, ♂ (MZSP); So Roque, ♀ (MZSP); Pirassununga, ♀ (MZSP). *Rio Grande do Sul*. Garruchos So Borja, ♀, ♂ (FZRS). So Francisco de Paula, 2♀ (FZRS). BOLIVIA: *Dept. Beni*. Rio Beni [66:W, 12:30S], ♀ (AMNH). *Cochabamba*. Gral. Roman, ♀ (MULP). PARAGUAY: *Dept. Concepcin*. Territ. Foncire, 7♀ (MCZ, NMW); Apa, ♀ (AMNH). *Caaguaz*. Coln. Walter Instrn, 4♀ (JAK). *Alto Paran*. Pto. Stroessner, 2♀ (MHNG); km 12 de Stroessner, ♀ (JAK). *Itapu*. Isla Yacreta, ♀ (MACN). BOLIVIA: *Dept. Beni*. Ro Beni, ♀ (AMNH). *Cochobamba*. Gral. Roman, ♀ (MULP). ARGENTINA: *Prov. Misiones*. San Ignacio, 4♀ (MULP); Iguaz, 4♀ (MULP, MEG); Pindapoy, ♀ (MULP); Montecarlo, 2♀ (MEG); Punta 17 de Octubre, many ♀, 3♂ (MACN); Santa Mara, 2♀ (MACN); Aguarai-Guaz, ♀ (MACN); Rio Iguaz, on rd. to Iguaz, ♀ (MACN); Rio Uruguai, nr. Pto. Bemberg, ♀ (MACN).

*Micrathena triangularis* (C. L. Koch)  
 Figures 326–336; Map 6

*Acrosoma triangulare* C. L. Koch, 1836: 78, fig. 226.  
 Female from Brazil (ZSM), destroyed.

*Acrosoma pilosa* Taczanowski, 1873: 271, pl. 5, fig. 23, ♀. Two female and two juvenile syntypes from Uassa, French Guiana [Uaa, Amap, Brazil] (PAN), examined. NEW SYNONYMY.

*Acrosoma sordida* Taczanowski, 1873: 273, pl. 6, fig. 25, ♀. Female holotype from Cayenne, French Guiana (PAN), examined. NEW SYNONYMY.

*Acrosoma gibbosum* Taczanowski, 1879: 113, pl. 1, fig. 30, ♀. Four female syntypes from Amable Mara [Junn], Peru (PAN), examined. NEW SYNONYMY.

*Micrathena sordida*.—Reimoser, 1917: 105, pl. 4, fig. 8, ♀. Roewer, 1942: 964.

*Micrathena triangularis*.—Reimoser, 1917: 107, pl. 5, fig. 10, ♀. Roewer, 1942: 965. Bonnet, 1957: 2880.

*Micrathena pilosa*.—Roewer, 1942: 961.

? *Micrathena ruschi* Mello-Leito, 1945b: 266, figs. 7–9, ♀. Female from Santa Teresa, Est. Esprito Santo, Brazil (MNRJ), lost. DOUBTFUL NEW SYNONYMY.

*Micrathena gertschi* Chickering, 1964: 261, figs. 23–29, ♂. Male holotype from Simla, Trinidad, Lesser Antilles (AMNH), examined. NEW SYNONYMY.

*Synonymy*. C. L. Koch gave an adequate description and illustration of this species. *Acrosoma pilosa*, *sordida* and *gibbosum* appear to be females of this species from French Guiana and Peru; *M. gertschi* is the male.

Mello-Leito's illustration of a female with 18 spines and elongate sternum and genital area are probably this species.

*Description*. Female from French Guiana. Carapace, sternum dark brown, legs brown. Dorsum of abdomen brownish black, with large and small sclerotized discs darker brown; white edge on each side and an indistinct transverse white edge on the posterior; sides with white marks; venter between epigynum and spinnerets dark brown; dark brown ring around spinnerets. Carapace with one pair of dimples; thorax very high (Fig. 326). Abdomen trapezoidal with 14 to 16 spines; many large circular discs on the dorsum and sides, and many tiny sclerotized spots in between (Fig. 327). Total length, 6.8 mm. Carapace, 2.3 mm long, 2.1 mm wide. First femur, 2.3 mm; patella and tibia, 2.3 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 2.1 mm; third, 1.3 mm. Fourth femur, 2.5 mm; patella and tibia, 2.0 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

Male holotype of *M. gertschi*. Carapace dusky brown, head dark with narrow median lighter area between thoracic mark and posterior edge. Sternum dark dusky brown. Coxae, legs yellow-white. Dorsum of abdomen with two dark paraxial bands, lighter marks in between (Fig. 335), sides and venter black. Carapace with round thoracic mark. First coxa with hook; groove on second femur. First and second legs with macrosetae. Abdomen longer than wide, narrowest posteriorly, sides slightly wavy (Fig. 335). Total length, 4.5 mm. Carapace, 1.8 mm long, 1.2 mm wide. First femur, 1.7 mm; patella and tibia, 1.6 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm;

third, 0.8 mm. Fourth femur, 1.8 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 5.8 to 7.4 mm, males from 4.3 to 4.9 mm. Females may have an additional small pair of spines in front of the second pair (the first laterals, Fig. 328). Others from Peru have an additional pair of small spines on the posterior behind and below the seventh pair (Fig. 326). Females usually have 14 spines, but sometimes 16; rarely 18. The density of tiny sclerotized spots on the dorsum of the abdomen is variable.

Some females from southern Brazil have the characteristic epigynum but lack the middle lateral spines (as in *M. plana*); they have four spines, one posteriorly on each side. Some few specimens from Colombia, Peru, and Brazil have the characteristic spines, but have the transverse bar swollen as in *M. plana*. Do the two species hybridize?

*Note.* A male was collected with a female in Suriname by Debby Smith, and males are in collections with females from Cucharas, Peru.

*Diagnosis.* Females can be distinguished from *M. duodecimspinosa* and *M. plana* by the additional pair of spines on the sides of the abdomen (Figs. 327, 328). They differ from *M. plana* and *M. quadriserrata* by the concave or straight anterior margin of the transverse bar of the epigynum, and by its wide median lobe (Figs. 329, 330). They differ from *M. excavata* by lacking the ventral spines or tubercles above the spinnerets (Fig. 326). Usually females have the abdomen more sclerotized than that of *M. plana*.

The male differs from that of related species by the pointed terminal apophysis and by the sclerotized pointed conductor (Fig. 336).

*Natural History.* Specimens have been taken from gallery forest in Mato Grosso.

*Distribution.* Trinidad, northern South America to Peru and southern Brazil (Map 6).

*Records.* LESSER ANTILLES: *Trini-*

*dad.* common, ♀, ♂ (AMNH, MCZ). VENEZUELA: *Est. Carabobo.* San Esteban, ♀ (CUC). *Aragua.* Rancho Grande, ♀ (AMNH). *Monagas.* Caripito, ♀ (AMNH). *Bolívar.* Hato la Vergarena, ♀ (AMNH). GUYANA: nr. Mazaruni, Pakaraima Mts., ♀ (CUC); Ireng Riv., Roraima, ♀ (AMNH). Upper Essequibo Riv., ♀ (AMNH). Canje, Ikurua Riv., ♀ (AMNH). Kaieteur, ♀ (AMNH). Kartabo, ♀ (AMNH). SURINAME: upper Surinam Riv., ♀ (BMNH). *Saramacca Prov.* Voltzberg-Raleighvallen Nature Reserve, ♀, ♂ (MCZ). *Brokopondo.* Browns Berg, ♀ (MCZ). FRENCH GUIANA: Cayenne, ♀, 4♂ (PAN). COLOMBIA: *Dept. Antioquia.* Mutatá Cancheras, ♀ (MCZ). *Santander.* Río Suárez, ♀ (AMNH). *Cundinamarca.* Bogotá, ♀ (BMNH). Río Suárez, ♀ (AMNH). *Meta.* Villavicencio, ♀ (CAS), ♀ (MCZ); 45 km N Villavicencio, 1,500 m, 2♀ (AMNH, CAS). PERU: *Dept. Loreto.* La Frontera, Upper Utoquinia, ♀ (AMNH); Río Igara, Parandi tributary of Putumayo, ♀ (BMNH). *San Martín.* 20 km NE Moyobamba, 1,600 m, 3♀ (AMNH). *Huánuco.* Cucharas, ♀, ♂ (F. Woytkowski, EPC); Tingo María, 9♀, ♂ (AMNH, CAS); near Ucayacu, 2♀ (AMNH). BRAZIL: *Est. Pará.* Canindé, 7♀ (AMNH); 50 km E Canindé, 7♀ (AMNH); Cachoeira, ♀ (IBSP); Rio Gurupi, 2♀, ♂ (MSP); Santarém, 11♀ (BMNH); Belém, 7♀ (AMNH, MACN, MCZ, MEG); km 305 Ligeação-Belém, ♀ (MZSP); Jacaréanga, ♀ (AMNH). *Amazonas.* Rio Autás, Cururú, ♂ (NRS); Rio Autás, Cururuzinho, 6♀ (NRS); Manaus, 7♀ (INPA, MEG, NRS); Rio Negro, Umarituba, ♀ (NRS). *Amapá.* Villa Amazonas, 4♀ (CAS); Serra do Navío, ♀ (CAS). *Rondônia.* Pôrto Velho, 2♀ (AMNH, MCZ). *Mato Grosso.* Chapada dos Guimarães, 2♀ (AMNH); 260 km N Xavantina (MCZ). *Bahia.* Iguassú, ♀ (NRS); Salvador, ♀ (SMK). *Espírito Santo.* Goitacazes, ♀ (MNRJ); Rio São José, 5♀ (MZSP). *Rio de Janeiro.* Petrópolis, 4♀ (MNRJ). *São Paulo.* Nova Europa, ♀ (MZSP); Boracéia, 2♀ (MZSP); Campos de Serra, ♀ (MZSP); Salesópolis, ♀ (MZSP). *Paraná.* Curitiba, 2♀ (MNRJ); Paranagua, ♀ (MNRJ). *Santa Catarina.* Blumenau, 2♀

(MZSP), 3♀ (BMNH), 6♀ (NMW); Joinville, 4♀ (MNRJ). *Rio Grande do Sul*. Vila Oliva, ♀, ♂ (FZRS). BOLIVIA: *Dept. Cochabamba*. Gral. Roman, 5♀, 2♂ (MULP); Chapare, ♀ (MULP). PARAGUAY: *Dept. Alto Paraná*. Taguaranapa, 3♀ (EPC). *Concepción*. Territ. Foncière, 2♀ (MCZ); [? Río] Apa (AMNH). ARGENTINA: *Prov. Salta*. El Tabacal, 2♀ (MACN); Cartagal, 5♀ (MACN); Santa María, 4♀ (MACN).

*Micrathena huanuco* new species  
Figures 337–341; Map 6

*Holotype*. Female with three paratypes (1 MCZ, 2 EPC) from Cucharas, Huallaga Valley, Dept. Huánuco, Peru, Feb.–April 1954 (F. Woytkowski, MCZ). The specific name is a noun in apposition after the type locality.

*Description*. Female. Carapace orange-brown. Sternum, legs dark brown. Dorsum of abdomen orange-brown with tiny white pigment spots posteriorly and on each side; venter with black streaks on brown. Carapace with thoracic depression and high thorax; no dimples, no rim in dorsal view. Eyes subequal in size. Abdomen subtriangular with a pair of spines overhanging carapace, a large posterolateral double spine, and four pairs of small lateral spines (Figs. 337, 338). Total length, 6.0 mm. Carapace, 2.4 mm long, 2.0 mm wide. First femur, 2.4 mm; patella and tibia, 2.4 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm. Second patella and tibia, 2.2 mm; third, 1.4 mm. Fourth femur, 2.6 mm; patella and tibia, 2.2 mm; metatarsus, 1.6 mm; tarsus, 0.6 mm.

*Variation*. Females vary in total length from 6.0 to 7.2 mm.

*Diagnosis*. This species differs from *M. parallela* in the posterior view of the epig-

ynum (Fig. 340) and having four pairs of spines on the side and none below the posterolateral double spine (Figs. 337, 338). It differs from the sympatric *M. exlinae* by being larger, having the median piece of the epigynum with almost parallel sides (Fig. 340), and by having black pigment on the sternum and black streaks on the venter of the abdomen from the spinnerets to the posterolateral double spine and up the sides. It differs from *M. plana* and *M. triangularis* by having only two posterodorsal spines (Fig. 337).

*Micrathena exlinae* new species  
Figures 342–346; Map 6

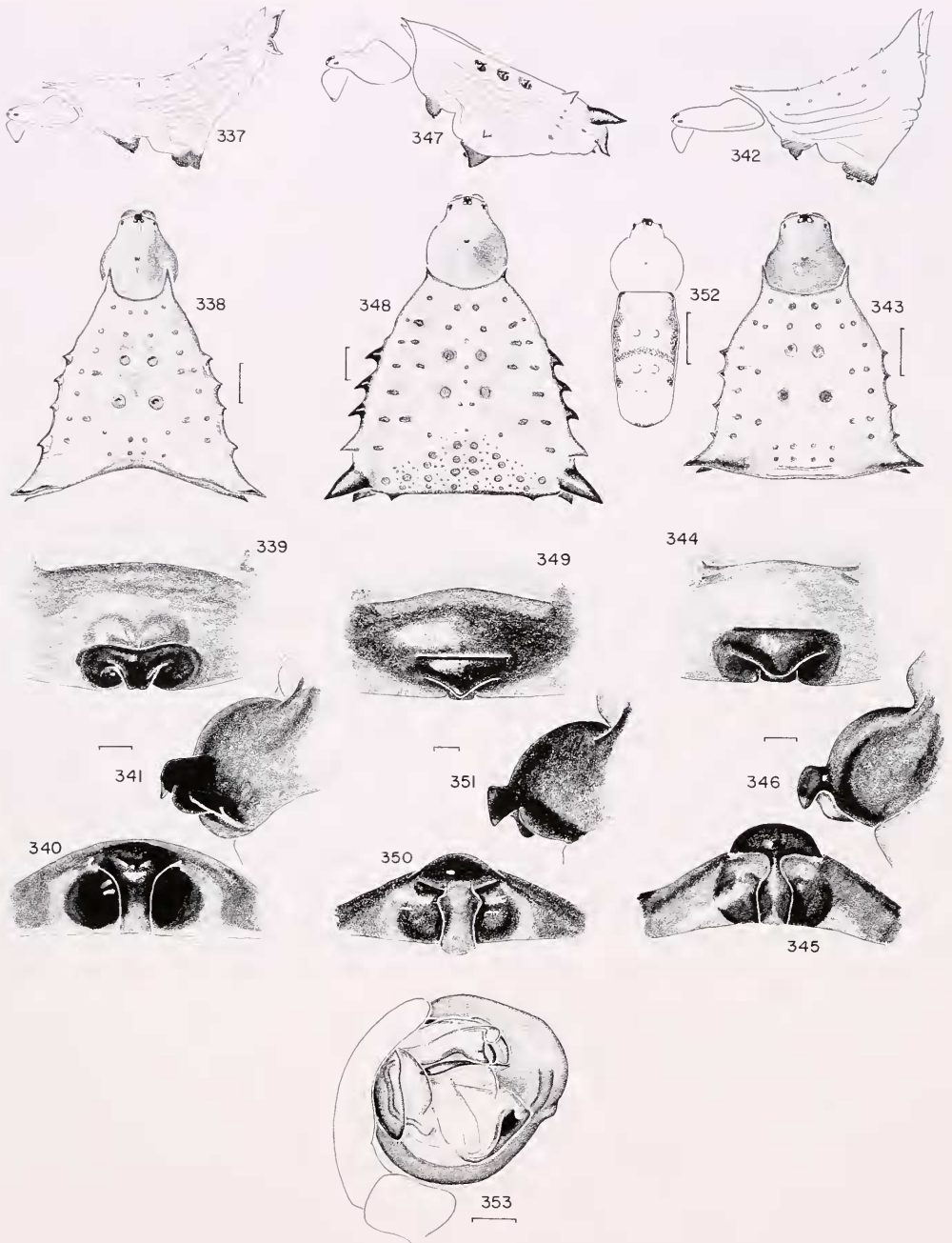
*Holotype*. Female with one paratype from Cucharas, Huallaga Valley, Huánuco, Peru, Feb.–April 1954 (F. Woytkowski, MCZ). The species is named after the late Harriet Exline, who started a revision of *Micrathena* of western South America.

*Description*. Female. Carapace orange, head lightest, sides of thorax dark. Sternum orange, coxae lighter orange; distal articles of legs dusky orange. Dorsum of abdomen orange, large spines underlain by some white pigment spots; sides dusky orange; venter light orange, sclerotized areas darker. Carapace with high thorax and thoracic depression; lacking dimples. Posterior median eyes 1.3 diameters of anterior medians; laterals 0.8 diameters. Total length, 5.6 mm. Carapace, 1.9 mm long, 1.7 mm wide. First femur, 2.2 mm; patella and tibia, 2.2 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 1.8 mm; third, 1.0 mm. Fourth femur, 2.3 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

*Diagnosis*. This species differs from *M. huanuco* by having a bottle-shaped septum on the posterior face of the epigynum

Figures 337–341. *Micrathena huanuco* n. sp., female. 337. Lateral. 338. Dorsal. 339. Epigynum, ventral. 340. Epigynum, posterior. 341. Epigynum, lateral.

Figures 342–346. *Micrathena exlinae* n. sp., female. 342. Lateral. 343. Dorsal. 344. Epigynum, ventral. 345. Epigynum, posterior. 346. Epigynum, lateral.



Figures 347–353. *Micrathena excavata* (C. L. Koch). 347–351. Female. 348. Dorsal. 349. Epigynum, ventral. 350. Epigynum, posterior. 351. Epigynum, lateral. 352, 353. Male. 352. Dorsal. 353. Left palpus, mesal.

Scale lines. 0.1 mm, except Figures 337, 338, 342, 343, 347, 348, 352, 1.0 mm.

(Fig. 345). It differs from *M. triangularis* by having only two posterodorsal spines (Figs. 342, 343).

*Paratypes.* PERU: *Dept. Huánuco.* Cucharas, ♀ (AMNH); Santa Teresa, Río Huallaga, 6,000 m el., Aug. 1954, ♀ (F. Woytkowski, EPC).

*Micrathena excavata* (C. L. Koch)

Figures 347–353; Map 6

*Acrosoma excavatum* C. L. Koch, 1836: 80, pl. 227, ♀. Female holotype from Brazil (ZSM), destroyed.

*Micrathena excavata*:—Reimoser, 1917: 108, pl. 5, fig. 9, ♀. Roewer, 1942: 957. Bonnet, 1957: 2866.

? *Micrathena mirifica* Chickering, 1961: 437, figs. 117–121, ♂. Male holotype from Barro Colorado Island, Panama (MCZ), examined. DOUBTFUL SYNONYMY.

*Micrathena subflava* Chickering, 1961: 461, figs. 189–193, ♀. Female holotype from Barro Colorado Island, Panama Canal Zone (MCZ), examined. NEW SYNONYMY.

*Synonymy.* C. L. Koch described the diagnostic light colored fourth lateral pair of spines situated between darker spines. Chickering did not know of Koch's species and described it as a new species, *M. subflava*. *Micrathena mirifica* is perhaps the male of this species.

*Description.* Female from French Guiana. Carapace, sternum, legs orange. Sternum with indistinct posterior gray patch. Dorsum of abdomen light orange; anterior three pairs of lateral spines and large posterolateral spine black, spine in between light (Fig. 348); sides, venter light orange. Epigynum and ring around spinnerets black. Carapace without dimples or rim, thorax high (Figs. 347, 348). Total length, 7.5 mm. Carapace, 2.5 mm long, 2.3 mm wide. First femur, 2.7 mm; patella and tibia, 2.7 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm. Second patella and tibia, 2.3 mm; third, 1.4 mm. Fourth femur, 2.9 mm; patella and tibia, 2.4 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

Male. Carapace orange, sternum light orange with gray mark posteriorly. Dorsum of abdomen white with black marks (Fig. 352); venter yellow-white with a black mark behind spinnerets. Carapace

smooth with a median thoracic mark. First coxa without hook. First and second legs with macrosetae. Total length, 4.1 mm. Carapace, 1.8 mm long, 1.6 mm wide. First femur, 1.7 mm; patella and tibia, 1.7 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm. Second patella and tibia, 1.4 mm; third, 0.8 mm. Fourth femur, 1.6 mm; patella and tibia, 1.2 mm; metatarsus, 1.0 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 7.3 to 9.2 mm. Compared to related species there is little variation, and all specimens appear alike. The first three pairs of lateral spines may be light in color, the fourth always is.

*Note.* *M. mirifica* may be the male of this species, although it lacks a coxal hook (characteristic of this species group) and has not been collected with a female. The male has a uniformly colored carapace, and a gray spot on the light sternum, as do females.

*Diagnosis.* Females differ from related species by their slightly larger size, by having 18 pairs of spines, and by the light colored fourth lateral pair of spines in front of the black posterolaterals. They also have an unusual pair of soft, light colored ventral spines (or tubercles), one on each side of the spinnerets (Fig. 347).

Males differ from others of this species group by lacking the coxal hook, by the thorn-shaped rim of the median apophysis, and by the shape of the terminal apophysis (Fig. 353).

*Distribution.* From Panama to Peru and Brazil (Map 6).

*Records.* PANAMA: *Prov. Panamá,* Canal Area. Barro Colorado Island, many collections, ♀, ♂ (AMNH, MCZ); Pipeline Rd., ♀ (MCZ); Fort Sherman, ♀ (UPMI). VENEZUELA: *Est. Bolívar.* Mato la Vergarena [6:45N, 63:30W], 25 Oct. 1954, ♀ (AMNH). GUYANA: Kartabo, 1924, ♀ (CUC). PERU: *Dept. Huánuco.* Tingo María, 670 m, ♀ (AMNH, EPC). BRAZIL: *Terr. Amapá.* Uaçá, ♀ (PAN). *Est. Pará.* Canindé, 1964, ♀ (J. Carvalho, AMNH). *São Paulo.* Ubatuba, ♀ (MZSP); Pôrto



Cobral, ♀ (MZSP). *Paraná*. Paragua, ♀ (MNRJ). *Santa Catarina*. ♀ (NMW). ARGENTINA: *Prov. Misiones*. Parque Nac. Iguazú, ♀ (MEG); Santa María, 2♀ (MACN); Pto. Bamberg, ♀ (MACN).

*Micrathena marta* new species  
Figures 354–358; Map 6

*Holotype*. Female from Río Frío, 30 km E of Santa Marta, Dept. Magdalena, Colombia, 2 July 1927 (G. Salt, MCZ). The specific name is a noun in apposition after the type locality.

*Description*. Female. Carapace, sternum, coxae orange. Legs black. Abdomen black except for a ventral pair of white spots on each side, slightly anterior of spinnerets. Carapace with high thorax, one pair of dimples, and thoracic depression. Posterior median eyes slightly larger than others, which are subequal. Abdomen with 16 spines (Figs. 354, 355). Total length, 5.6 mm. Carapace, 2.0 mm long, 1.6 mm wide. First femur, 1.6 mm; patella and tibia, 1.7 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.5 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.4 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm.

*Variation*. The third pair of spines, the second on the sides, is almost lacking on the right side but not on the left (Fig. 355).

*Diagnosis*. This species differs from *M. bananal* by being larger, having a yellow sternum, and by the more flattened shape of the epigynum (Fig. 356).

*Micrathena bananal* new species  
Figures 359–363; Map 6

*Holotype*. Female from Santa Isabel do Moro [12°S, 51°W], Ilha do Bananal, Est. Goiás, Brazil, June 1981 (M. Alvarenga, AMNH). The specific name is a noun in apposition after the type locality.

*Description*. Female. Carapace brown, darker on sides. Sternum blackish brown. Coxae and distal articles of legs orange, darkest distally. Dorsum of abdomen white, dusky on sides; sides black; venter black with a white longitudinal band on each side and white patches behind spin-

nerets. Carapace with thoracic depression and one pair of dimples; thorax very high. Posterior median eyes slightly larger than others, which are subequal in size. Abdomen shield-shaped with fourteen spines: the large first pair overhangs the carapace; three tiny pairs on sides, and three larger posterolaterals (Figs. 359, 360). Total length, 5.0 mm. Carapace, 1.9 mm long, 1.5 mm wide. First femur, 1.7 mm; patella and tibia, 1.8 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm. Second patella and tibia, 1.5 mm; third, 1.0 mm. Fourth femur, 2.1 mm; patella and tibia, 1.6 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

*Variation*. Females vary in total length from 4.8 to 5.0 mm.

*Diagnosis*. This species differs from the sympatric *M. alvarengai* by having only 14 spines on the abdomen (Figs. 359, 360) and a wider lobe of the epigynum (Fig. 361). It differs from *M. plana* by having the anterior margin of the transverse bar of the epigynum straight (Fig. 361); from *M. huanuco* and *M. exlinae* by having three pairs of posterolateral spines (Fig. 359); and from *M. triangularis* by the parallel sides of the abdomen (Fig. 360) and the different profile of the epigynum (Fig. 363). It differs from the similar *M. marta* by being smaller and by having a black sternum.

*Paratype*. BRAZIL: *Prov. Bahia*. Iguasú, Rio Una, 3 July 1924, ♀ (A. Roman, NRS).

*Micrathena alvarengai* new species  
Figures 364–368; Map 6

*Holotype*. Female holotype from Santa Isabel do Moro [12°S: 51°W], Ilha do Bananal, Est. Goiás, Brazil, June 1961 (M. Alvarenga, AMNH). The species is named after the collector.

*Description*. Female. Carapace dark orange-brown, sides blackish. Sternum blackish brown. Coxae orange, distal leg articles orange-brown. Dorsum of abdomen white, with dusky area on each side and a black patch on each side on posterolateral spines; sides black; venter black,

with indistinct white band on each side. Carapace with one pair of very distinct dimples anteriorly and distinct thoracic depression; thorax unusually high, with depression on anterior of thoracic slope. Posterior median eyes slightly larger than anterior medians; laterals subequal to anterior median eyes. Abdomen squarish with a pair of large spines overhanging carapace, and eight equally spaced pairs of spines (Fig. 365). Total length, 5.0 mm; Carapace, 1.8 mm long, 1.4 mm wide. First femur, 1.6 mm; patella and tibia, 1.7 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.4 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.6 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

*Diagnosis.* This species differs from *M. bananal* by having 18 spines on the abdomen (Figs. 364, 365). It differs from *M. triangularis* by the shape of the epigynum in profile, and by having a light spot behind the lobe of the epigynum (Figs. 367, 368).

*Micrathena quadriserrata* F. P.-Cambridge  
Figures 369–375; Map 6

*Micrathena uncata* F. P.-Cambridge, 1904: 533, pl. 50, fig. 14, ♂. Male holotype from Guatemala (BMNH), examined. Roewer, 1942: 965. Bonnet, 1957: 2881. Chickering, 1962: 466, figs. 202–205, ♂. NEW SYNONYMY.

*Micrathena quadriserrata* F. P.-Cambridge, 1904: 534, pl. 50, fig. 18, ♀. Four juvenile syntypes from Quezaltepeque, Guatemala (BMNH) examined. Reimoser, 1917: 94, pl. 3, fig. 4, ♀. Roewer, 1942: 962. Bonnet, 1957: 2875. Chickering, 1961: 448, figs. 146–149, ♀.

*Chaetacis rouxi* Mello-Leitão, 1939: 68, figs. 45–47, ♀. Female holotype from Prov. Falcón, Venezuela (NMB), examined. NEW SYNONYMY.

*Micrathena modica* Chickering, 1961: 439, figs. 122–126, ♂. Male holotype from Summit, Panama (MCZ), examined. NEW SYNONYMY.

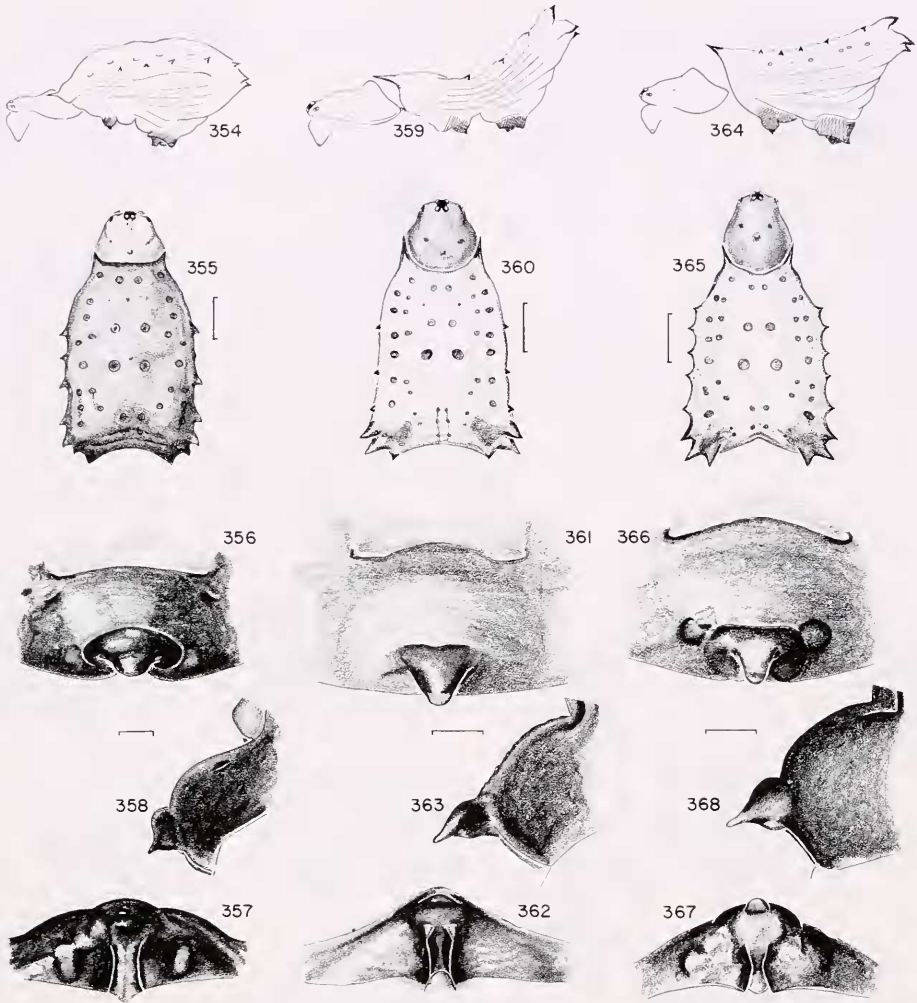
*Synonymy.* *Micrathena uncata* is the male of *M. quadriserrata*. Although the name *uncata* has page priority, it is preferable to use that of the female *M. quadriserrata*. The type of *M. uncata* is in poor condition; details had to be illustrated (and reversed) from the right palpus (Fig. 375).

The type of *C. rouxi* Mello-Leitão does not differ from other specimens of this species. Chickering (1962) did not notice the similarity of the palpi of *M. uncata* and his new *M. modica*, since he characteristically drew each from a different angle. He noted that both lacked coxal hooks. The type of *M. uncata* has a hook, however.

*Description.* Female from Panama. Carapace light orange, sides blackish orange. Sternum with black pigment. Coxae orange; distal leg articles blackish on orange. Dorsum of abdomen white with dark patches (Fig. 370); venter black with a pair of paraxial white bands, one on each side. Carapace with one anterior pair of dimples, a median thoracic mark, and a very high thorax. Abdomen with two sharp anterior spines, two pairs of denticles on the sides, and a posterior lobe on each side with three or four teeth (Figs. 369, 370). Total length, 6.0 mm. Carapace, 2.3 mm long, 1.9 mm wide. First femur, 2.4 mm; patella and tibia, 2.6 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm. Second patella and tibia, 2.2 mm; third, 1.3 mm. Fourth femur, 2.7 mm; patella and tibia, 2.1 mm; metatarsus, 2.0 mm; tarsus, 0.5 mm.

Male. Carapace orange-brown. Sternum, legs brown. Dorsum of abdomen grayish white with dark patches; venter black. Carapace with median thoracic depression; no dimples (Fig. 374). First coxa with small posterior hook, second femur with groove. Total length, 5.8 mm. Carapace, 2.1 mm long, 1.7 mm wide. First femur, 2.2 mm; patella and tibia, 2.0 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm. Second patella and tibia, 1.9 mm; third, 1.0 mm. Fourth femur, 2.3 mm; patella and tibia, 1.7 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

*Variation.* Females vary in total length from 5.2 to 7.4 mm, males from 4.5 to 5.8 mm. Some females have the dorsum of the abdomen all black. The posterolateral lobes of the abdomen may be much longer than those in Figure 370, and may sometimes be twisted into a vertical posi-



Figures 354–358. *Micrathena marta* n. sp., female. 354. Lateral. 355. Dorsal. 356. Epigynum, ventral. 357. Epigynum, posterior. 358. Epigynum, lateral.

Figures 359–363. *Micrathena bananal* n. sp., female. 359. Lateral. 360. Dorsal. 361. Epigynum, ventral. 362. Epigynum, posterior. 363. Epigynum, lateral.

Figures 364–368. *Micrathena alvarengai* n. sp., female. 364. Lateral. 365. Dorsal. 366. Epigynum, ventral. 367. Epigynum, posterior. 368. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 354, 355, 359, 360, 364, 365, 1.0 mm.

tion. All penultimates and small adults have four spines on these lobes; larger females have the last pair of spines very small or absent. The lack of the characteristic coxal hook in males from Panama is puzzling.

*Note.* Females and males have been collected together in Nicaragua, Costa Rica and Panama.

*Diagnosis.* Females can be separated from other 12- or 14-spined species by the two posterolateral lobes of the abdomen

(Fig. 370) separated by a wide notch, and by the V-shaped transverse bar of the epigynum, often narrower in the center than on the sides. There is only a slight median lobe or none with a bulge underneath (dorsal) to it (Figs. 371–373). Females are similar to those of *M. brevispina*, which is smaller, has about 16 spines, and a deeper notch between the posterior lobes of the abdomen.

Males can be separated from others by the curved conductor and terminal apophysis, enclosing the embolus but open toward the mesal side of the palpus (Fig. 375).

*Distribution.* Chiapas, Mexico to Venezuela (Map 6).

*Records.* MEXICO: *Est. Chiapas.* Huixtla, ♀ (AMNH); Cacahuatan, ♀ (AMNH); nr. Huehuetan, ♀ (AMNH); 32 km NW Ocozocoautla, ♀ (CAS); 18 km N Tuxtla Gutiérrez, ♀ (CAS); El Sumidero, 2♀ (CAS); Montozintla, 1,000 m, ♂ (CNC); NE Los Amates, 2♀, ♂ (RL); Chiapa de Corzo, 4♀ (BC). HONDURAS: Copán, ♀ (AMNH). EL SALVADOR: San Salvador, 2♀ (AMNH); Santa Tecla, 7♀ (AMNH). NICARAGUA: nr. Managua, 10♀, ♂, 2 imm. (AMNH). COSTA RICA: *Prov. San José.* San José, 3♀, 4♂, 3 imm. (AMNH); Villa Colón, 6♀, 2♂ (MZCR); La Caja, 5♂ (NMW). *Guanacaste.* Cañas, ♀, ♂ (MZCR); Tilarán, ♀ (NMW); Bebedero, 4♀ (NMW). *Heredia.* W of Alajuela, ♀ (SRC). *Puntarenas.* nr. Esparta, 800 m, ♂ (MCZ); nr. Cabuya, ♀ (AMNH). PANAMA: *Prov. Panamá,* canal area. Miraflores Locks, ♀ (MCZ); Ft. Sherman, ♀ (MCZ); Barro Colorado Isl., many coll. (MCZ); Cocoli, 3♀ (AMNH); Summit, ♂ (AMNH); Cerro Ancón, ♀ (UPMI). VENEZUELA: *Distr. Federal.* Caracas, 6♀ (MCZ, NMW).

*Micrathena triserrata* F. P.-Cambridge  
Plate 2; Figures 376–385; Map 6

*Micrathena triserrata* F. P.-Cambridge, 1904: 534, pl. 50, fig. 17, ♀. Three female syntypes from Guatemala (BMNH), examined. Reimoser, 1917: 95. Roewer, 1942: 965. Bonnet, 1957: 2881. Chickering, 1961: 464, figs. 198–201, ♀.

*Types.* Chickering refers to a lectotype which had an extra spine on the right side at the base of the trifid posterior lateral spine. Only three specimens, syntypes, were examined from the British Museum. Two of the three specimens had this unilateral spine, the third lacked it. One of the three specimens had the tip of the epigynum missing (Figs. 379, 382).

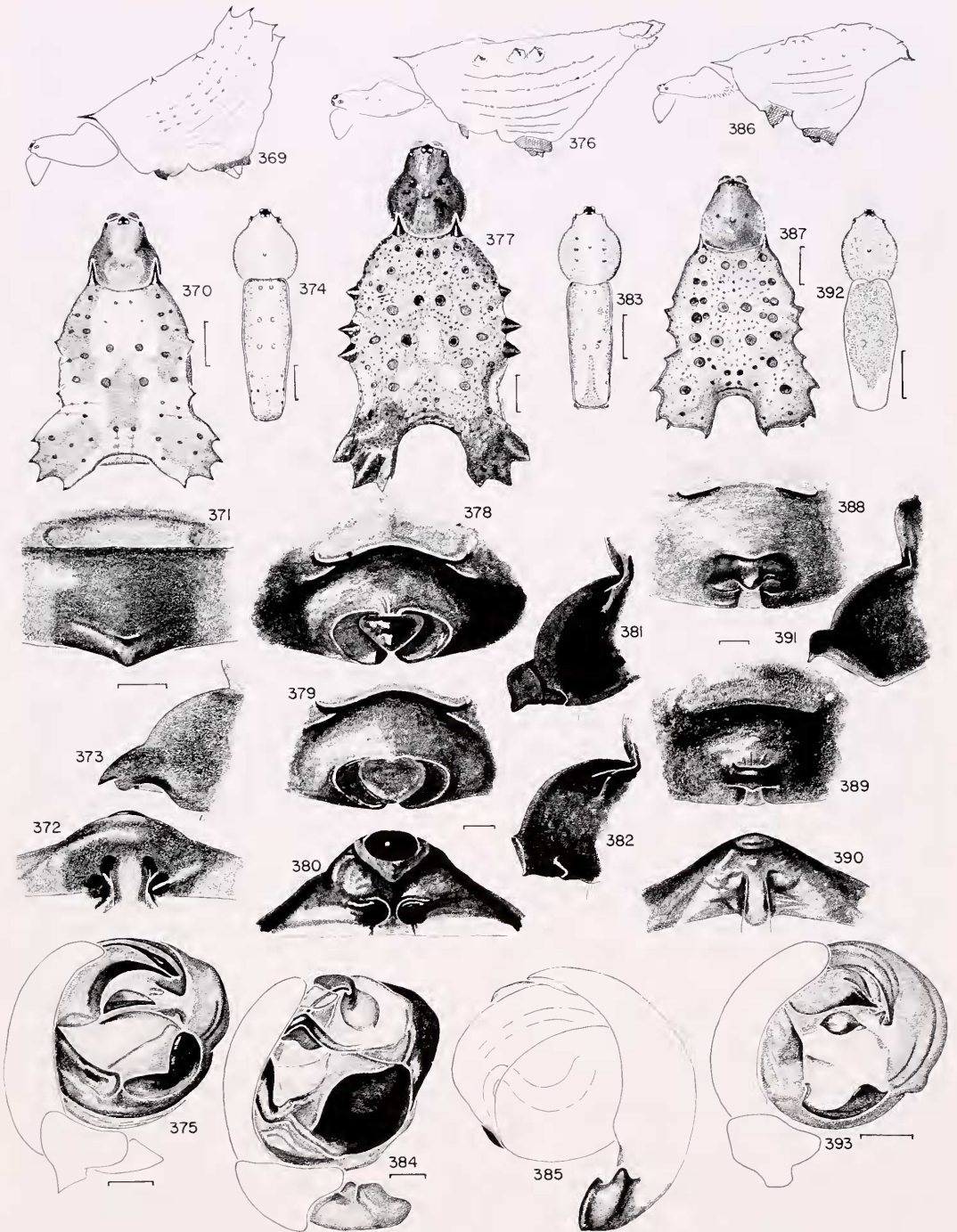
*Description.* Female syntype. Carapace, sternum dark brown, sides black. Legs dark brown, first femora black. Dorsum of abdomen blackish brown with median light patch, a pair of light patches, and some white along margin; sides dorsally whitish, venter gray-brown, sclerotized areas brown. Carapace with three pairs of dimples, a median thoracic depression, and thorax high. Abdomen with small discs, sclerotized spots dorsally (Figs. 376, 377); and 14 to 16 spines: three pairs of blunt spines on each side, and a trifid posterolateral wing whose base may have another denticle. Total length, 7.7 mm. Carapace, 2.8 mm long, 2.2 mm wide. First femur, 2.6 mm; patella and tibia, 2.7 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm. Second patella and tibia, 2.3 mm; third, 1.4 mm. Fourth femur, 3.2 mm; patella and tibia, 2.4 mm; metatarsus, 1.9 mm; tarsus, 0.7 mm.

Male. Carapace orange, sides gray. Sternum and coxae light orange; legs grayish brown. Dorsum of abdomen or-

Figures 369–375. *Micrathena quadriserrata* F. P.-Cambridge. 369–373. Female. 369. Lateral. 370. Dorsal. 371. Epigynum, ventral. 372. Epigynum, posterior. 373. Epigynum, lateral. 374. 375. Male. 374. Dorsal. 375. Left palpus, mesal.

Figures 376–385. *Micrathena triserrata* F. P.-Cambridge. 376–382. Female. 376. Lateral. 377. Dorsal. 378, 379. Epigynum, ventral. 379. Lobe torn off. 380. Epigynum, posterior. 381, 382. Epigynum, lateral. 382. Lobe torn off. 383–385. Male. 383. Dorsal. 384. Palpus, mesal. 385. Palpus, lateral.

Figures 386–393. *Micrathena brevispina* (Keyserling). 386–391. Female. 386. Lateral. 387. Dorsal. 388, 389. Epigynum, ven-



tral. 390. Epigynum, posterior. 391. Epigynum, lateral. 388, 390, 391. (Argentina). 389. (Colombia). 392, 393. Male. 392. Dorsal. 393. Palpus, mesal.

Scale lines. 0.1 mm, except Figures 369, 370, 374, 376, 377, 383, 386, 387, 392, 1.0 mm.

ange-white with gray marks; venter gray and orange. Carapace with three pairs of indistinct dimples and a circular median thoracic depression (Fig. 383). First coxa with small hook, second femur with a groove. First tibia with macrosetae; second tibia with one row of five short, strong macrosetae. Total length, 4.7 mm. Carapace, 1.8 mm long, 1.4 mm wide. First femur, 1.9 mm; patella and tibia, 1.9 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 1.4 mm; third, 0.8 mm. Fourth femur, 2.0 mm; patella and tibia, 1.4 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 7.0 to 7.7 mm. This species may have a denticle outside at the base of the trifold posterolateral lobe, sometimes only on one side (Fig. 377). The epigynum in ventral view is variable and frequently has the tip torn off (Figs. 378–382).

*Note.* Male and females have been collected together by W. Maddison in Campeche, Mexico.

*Diagnosis.* Females of this species can be distinguished from those of *M. quadriserrata* by having a median lobe on the epigynum which may be torn off (Figs. 378–382); *M. quadriserrata* lacks such a distinct lobe. The male can be differentiated from others of the species group by the large sclerotized rim of the median apophysis, the small terminal apophysis and the upside-down V-shaped paramedian apophysis (Fig. 384).

*Distribution.* San Luis Potosí to Belize (Map 6).

*Records.* MEXICO: *Est. San Luis Potosí.* 6 km W El Naranjo, 13 Dec. 1965, ♀ (G. Ball, RL). *Veracruz.* 16 km S San José del Carmen, 16 April 1953, ♀ (L. I. Davis, AMNH). *Tecoluitla,* 13 Oct. 1947, ♂ (H. Wagner, AMNH). *Oaxaca.* 8 km E of Temascalapa, June–Aug. 1964, imm. (D. Janzen, AMNH). *Campeche.* Chicanna ruins, 8 km W of Xpujil, 12–14 July 1983, 2♀, 4♂ (W. Maddison, MCZ); 6 km W Francisco Escarcega, 11–12 July 1983, imm. (W. Maddison, MCZ). *Yucatan.* Co-

lonia Yucatan, Aug. 1952, imm. (J. and D. Pallister, AMNH); Chichen Itza, 10 July 1948, ♀ (C. and M. Goodnight, AMNH), March 1945, ♀ (H. Wagner, AMNH). *Quintana Roo.* Kohunlich ruins, 9 km S Francisco Villa, 14–17 July 1983, ♀ (W. Maddison, R. S. Anderson, MCZ); 31 km NE Felipe Carillo Puerto, Hwy. 307, 2♀ (W. Maddison, R. S. Anderson, MCZ). *Chiapas.* Palenque ruins area, 31 July 1983, ♂ (W. Maddison, MCZ). BELIZE: El Cayo, Sept. 1959, ♀ (N. L. H. Krauss, AMNH).

*Micrathena brevispina* (Keyserling)  
Figures 386–393; Map 6

*Acrosoma brevispinum* Keyserling, 1863: 70, pl. 2, fig. 3, ♀. Female type from Santa Fé de Bogota, N. Granada [Bogotá, Colombia] (BMNH), examined. Keyserling, 1892: 25, pl. 1, fig. 22, ♀.

? *Acrosoma bifissum* Keyserling, 1892: 30, pl. 1, fig. 27, imm. Female type from Blumenau [Est. Santa Catarina], Brazil, lost. DOUBTFUL SYNONYMY. *Acrosoma rubrospinum* Keyserling, 1892: 30, pl. 2, fig. 28, imm. Two juvenile syntypes from Blumenau [Est. Santa Catarina], Brazil (mis-labeled as type of *bifissum*) (BMNH), examined. NEW SYNONYMY.

*Micrathena brevispina*.—Reimoser, 1917: 91. Roewer, 1942: 955. Bonnet, 1957: 2863. Chickering, 1960c: 68, figs. 12–14, ♀.

*Micrathena mansueta* Chickering, 1960c: 83, figs. 66–70, ♂. Male holotype from the Amazon (HEO), examined. NEW SYNONYMY.

*Synonymy.* The types of *rubrospinum* are labeled *bifissum*. But both *A. bifissum* and *A. rubrospinum* are probably this species. Chickering named the male *M. mansueta*.

*Description.* Female from Colombia. Carapace, legs brown, sternum dark brown. Dorsum of abdomen whitish; venter of abdomen black. Carapace with a pair of shallow dimples in groove between head and thorax, and circular thoracic depression; thorax hairy on sides. Abdomen dorsally flattened (Figs. 386, 387). Total length, 5.4 mm. Carapace, 1.8 mm long, 1.6 mm wide. First femur, 1.8 mm; patella and tibia, 1.8 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm. Second patella and tibia, 1.7 mm; third, 1.0 mm. Fourth fe-

mur, 2.0 mm; patella and tibia, 1.7 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

Male from Colombia. Carapace, sternum dark brown. Coxae and remaining leg articles yellowish with some gray pigment on anterior of first pair of legs. Dorsum of abdomen with a black patch, white pigment all around; venter with a median wide black band, narrower behind than anteriorly, continuing beyond spinnerets to posterior tip. Carapace with distinct median depression, pair of very slight anterolateral dents, and many hairs (Fig. 392). First coxa with hook, second femur with groove. First two legs with macrosetae. Abdomen much longer than wide, slightly lobed anteriorly (Fig. 392), and narrower behind than in front. Total length, 4.2 mm. Carapace, 1.6 mm long, 1.2 mm wide. First femur, 1.4 mm; patella and tibia, 1.3 mm; metatarsus, 0.7 mm; tarsus, 0.3 mm. Second patella and tibia, 1.0 mm; third, 0.6 mm. Fourth femur, 1.5 mm; patella and tibia, 1.0 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 4.5 to 6.2 mm. Many have an entirely black abdomen; others have only black patches, or the abdomen may be white. The specimen from Chiriquí, Panama has only two spines on each side, and may belong to a different species.

*Note.* A male has been collected with females by W. Eberhard at Río Jamundi, Dept. Valle, Colombia.

*Diagnosis.* The female differs from related species by the shape of the abdomen (Fig. 387) and the short transverse bar of the epigynum (Figs. 388–390). The male differs by the shape of the conductor, the pointed tip of the terminal apophysis and the square median apophysis (Fig. 393).

*Distribution.* Doubtful from western Panama, Colombia to northern Argentina (Map 6).

*Records.* PANAMA: *Chiriquí Prov.* Volcán, 20 Feb. 1936, ♀ (W. J. Gertsch, AMNH). COLOMBIA: *Dept. Valle.* Río Jamundi, 9 Dec. 1969, 3♀, ♂ (W. Eberhard, MCZ); nr. Cali, 1,300 m, 15 Dec. 1971, ♀

(W. Eberhard, MCZ). *Meta.* Restropo, 1936, ♀ (J. Bequaert, MCZ); Mt. Redondo, 1,500 m, 71 km W Villavicencio, June 1947, ♀ (L. Richter, AMNH). BRAZIL: *Est. Pará.* Canindé, 1964, 2♀ (J. Carvalho, AMNH). *São Paulo.* Juquiá, 2♀ (F. Lane, MZSP). *Santa Catarina.* 3♀ (E. Reimoser, MCZ); Blumenau, ♀ (H. Leudenwaldt, MZSP). ARGENTINA: *Misiones Prov.* Eldorado, 1964, ♀ (A. Kovacs, AMNH); Puerto Victoria, 2♀ (Zenzes, MLP); Punta 17 de Octubre, 6♀ (MACN).

### *Micrathena molesta* Chickering

Plates 1, 2; Figures 394–404; Map 6

*Micrathena molesta* Chickering, 1961: 441, figs. 127–132, ♀. Female holotype from Tablazo [Cerro Tablazo, San José Prov.], Costa Rica (MCZ), examined.

*Description.* Female from type locality. Carapace orange, darker on each side. Sternum orange. Legs orange-brown. Abdomen orange with sclerotized areas orange-brown; sides and venter orange-white with some black pigment on sides and behind spinnerets. Carapace with high thorax, three pairs of dimples and a round thoracic mark; without rims. Abdomen dorsally flattened with one pair of spines overhanging carapace, three spines posterolaterally on each side and four pairs on sides (Figs. 394, 395). Total length, 7.0 mm. Carapace, 2.3 mm long, 1.2 mm wide. First femur, 2.2 mm; patella and tibia, 2.3 mm; metatarsus, 1.3 mm; tarsus, 0.5 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.4 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

Male from Costa Rica. Carapace orange, sides black. Sternum, coxae orange-white. Legs orange-gray. Dorsum of abdomen white with black along each side, venter gray with black patch on each side and one behind spinnerets. Carapace with three pairs of dimples and thoracic mark. First coxa with small hook on posterior edge, second femur with groove. Abdomen with sides almost parallel, slightly convex (Fig. 402). Total length, 3.4 mm.

Carapace, 1.3 mm long, 0.9 mm wide. First femur, 1.3 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.1 mm; third, 0.6 mm. Fourth femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 4.8 to 6.4 mm, males from 3.2 to 3.6 mm. The spines are sometimes reduced in size, and the third pair, the second laterals, may be replaced by a small hump. The transverse bar of the epigynum is of variable width. In about half the females examined it had been torn off, leaving a stump of variable shape (Figs. 399–401). Unlike specimens from Costa Rica, the female collected in Chiriquí, Panama is heavily sclerotized and dark, with brown carapace and legs, black abdomen with a white pigment band on each side and, in between, a transverse white stripe broken in the middle and located behind the fourth lateral spines.

*Note.* Female and male have been collected at Tuis hill top, and a number of males and females come from Finca La Selva, Costa Rica.

*Diagnosis.* Unlike similar species with 14 to 16 spines, the transverse bar of the epigynum is straight, projecting, and lacks a posteromedian lobe (Fig. 396). It is the only *Micrathena* species in Central America that has the bar of the epigynum torn off, leaving behind a depression of variable outline in posterior view (Figs. 399–401).

The male can be separated from others of the *kirbyi* group with a coxal hook by

the uneven outline of the tegulum (above the large median apophysis), by the projecting, sclerotized conductor forming a hook above the tip of the embolus, and by the shape of the paracymbium (Figs. 403, 404).

*Natural History.* Females had their webs in low vegetation in dense jungle at Turrialba (Plate 1).

*Distribution.* Nicaragua to western Panama (Map 6).

*Records.* NICARAGUA: Musawas, Waspuc Riv., ♂ (B. Malkin, AMNH). COSTA RICA: *Guanacasta Prov.* Tilarán, ♀ (MZCR). *Heredia.* Finca La Selva, nr. Puerto Viejo, 50 m, common, ♀, ♂ (MCZ). *Limón.* Waldeck Farm, ♀ (NMW); Hamburg Farm, 6♀ (NMW). *Cartago.* Turrialba, ♀♀ (AMNH, CAS, EPC, CUC); Navarro, ♀ (MZCR); Tuis, hill top, ♀, ♂ (MCZ). *San José.* San José, 5♀ (NMW); Braulio Carrillo Natl. Park, 2♀ (MCZ). *Puntarenas.* Monteverde, 1,580 m, 3♀, ♂, imm. (MCZ). PANAMA: *Bocas del Toro Prov.* Corriente Grandes, nr. Changuinola, ♀ (UPMI). *Chiriquí.* La Fortuna Dam site, Sept. 1976, ♀ (M. Robinson, MCZ).

#### *Micrathena lenca* new species Figures 405–409; Map 6

*Holotype.* Female, three female paratypes from Catherinas [?=Catarinita, 15°54'N 92°54'W], Chiapas, 1,400 m el., 14–22 May 1942 (H. Wagner, AMNH), one paratype (MCZ). The specific name is a noun in apposition after the Indian tribe of the region.

*Description.* Female. Carapace orange, black on sides. Sternum, legs orange. Dorsum of abdomen white, without pigment

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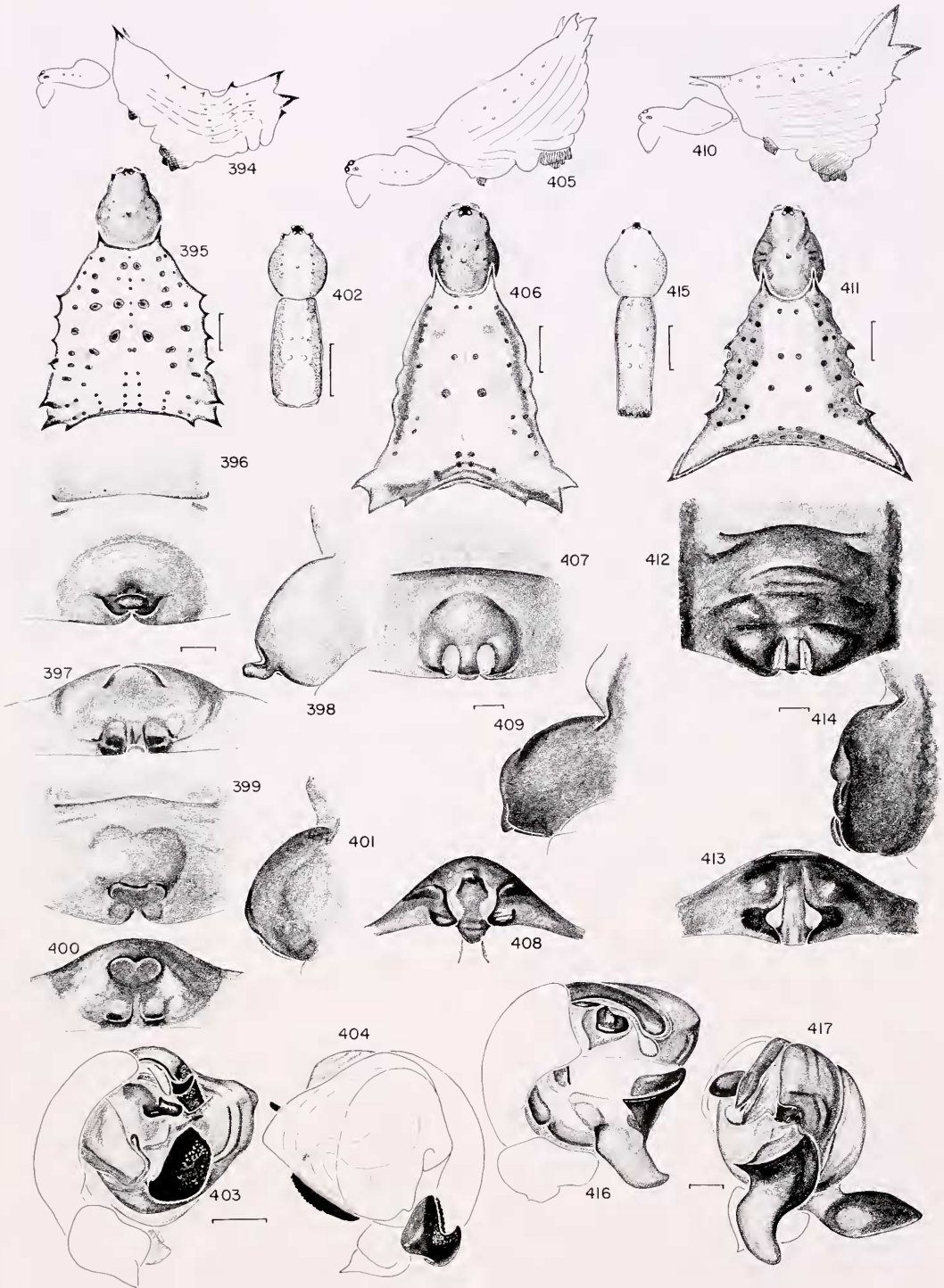
Figures 394–404. *Micrathena molesta* Chickering. 394–401. Female. 394. Lateral. 395. Dorsal. 396, 399. Epigynum, ventral. 397, 400. Epigynum, posterior. 398, 401. Epigynum, lateral. 399, 400, 401. Bar and lobe torn off. 402, 403. Male. 402. Dorsal. 403. Left palpus, mesal. 404. Palpus, lateral.

Figures 405–409. *Micrathena lenca* n. sp., female. 405. Lateral. 406. Dorsal. 407. Epigynum, ventral. 408. Epigynum, posterior. 409. Epigynum, lateral.

Figures 410–417. *Micrathena tziscao* n. sp. 410–414. Female. 410. Lateral. 411. Dorsal. 412. Epigynum, ventral. 413. Epigynum, posterior. 414. Epigynum, lateral. 415–417. Male. 415. Dorsal. 416. Palpus, mesal. 417. Palpus, ventral.

*Scale lines.* 0.1 mm, except Figures 394, 395, 402, 405, 406, 410, 411, 415, 1.0 mm.





on sides and posteriorly; indistinct black patch on each side and on each side of posterior face of triple spine; sides with black pigment, venter orange with eight sclerotized areas darker orange. Carapace with three pairs of dimples, distinct thoracic depression and high thorax. Posterior median eyes 1.5 diameters of anterior medians; laterals slightly smaller than anterior median eyes. Abdomen subtrapezoidal with a pair of spines overhanging carapace anterior, and a posterolateral extension bearing three spines (Figs. 405, 406). Total length, 6.5 mm. Carapace, 2.3 mm long, 1.9 mm wide. First femur, 2.4 mm; patella and tibia, 2.5 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 2.2 mm; third, 1.3 mm. Fourth femur, 2.6 mm; patella and tibia, 2.2 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm.

*Diagnosis.* This eight-spined species differs from all others by the globular epigynum having two light impressions posteriorly (Figs. 407, 409) and a sclerite on each side in posterior view (Fig. 408). The similar *M. tziscaoi* has 14 spines and differs in details of the epigynum.

*Micrathena tziscaoi* new species  
Figures 410–417; Map 6

*Types.* Female holotype from Laguna Tziscaoi, Montobello, Chiapas [16°05'N, 91°40'W], Mexico with female, male and juvenile paratypes, 17–18 Aug. 1973 (P. Brignoli, MCZ). The species name is a noun in apposition after the type locality.

*Description.* Female. Carapace orange, gray on each side. Sternum, legs orange. Coxae slightly lighter than sternum. Dorsum of abdomen white with black edge on each side and posteriorly; sides and venter black with two indistinct light patches on each side of spinnerets. Carapace with three pairs of quite indistinct dimples and distinct thoracic depression; thorax high. Posterior median eyes slightly larger than others, which are subequal. Abdomen subtriangular with fourteen spines, two overhanging carapace in front, three pairs on sides, a pair of double spines

posterolaterally with a small spine below (Figs. 410, 411). Total length, 6.7 mm. Carapace, 2.7 mm long, 2.0 mm wide. First femur, 2.6 mm; patella and tibia, 2.7 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 2.4 mm; third, 1.4 mm. Fourth femur, 2.8 mm; patella and tibia, 2.4 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

Male. Carapace orange, gray on sides. Sternum, legs orange. Dorsum of abdomen whitish with black on sides and posterior edge; sides black (Fig. 415); venter with black posterior to spinnerets; anterior orange with some gray pigment. Posterior median eyes slightly larger than others; posterior laterals slightly smaller than anterior median eyes. First coxa with hook, second femur with groove proximally. Sides of abdomen almost parallel. Total length, 4.6 mm. Carapace, 1.7 mm long, 1.3 mm wide. First femur, 1.7 mm; patella and tibia, 1.9 mm; metatarsus, 1.0 mm; tarsus, 0.6 mm. Second patella and tibia, 1.6 mm; third, 0.9 mm. Fourth femur, 1.8 mm; patella and tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm.

*Note.* It has been difficult to decide on the homology of sclerites around the embolus. The embolus is covered by a sclerotized terminal apophysis; below, proximally is a projecting sclerite that is probably part of the conductor (Fig. 416). The median apophysis lobe "hangs down" and resembles that found in the genus *Eustala* (Figs. 416, 417).

*Diagnosis.* Females differ from *M. lenca* by having 14 spines on the abdomen (Figs. 410, 411), and by the transverse swelling of the epigynum (Figs. 412–414). The unique shape of the median apophysis (Figs. 416, 417) separates the male from all others known.

*Micrathena clypeata* (Walckenaer)  
Plate 2; Figures 418–425; Map 6

*Epeira clypeata* Walckenaer, 1805: 67. Specimens without locality, lost.

*Acrosoma clypeatus*:—C. L. Koch, 1838: 38, pl. 272, ♀.  
*Micrathena clypeata*:—Reimoser, 1917: 90, pl. 2, fig.

3, ♀. Roewer, 1942: 955. Bonnet, 1957: 2864. Chickering, 1961: 400, figs. 14–20, ♀, ♂.

*Micrathena planata* Chamberlin and Ivie, 1936: 54, pl. 15, figs. 132, 133, ♀, ♂. Female holotype from Barro Colorado Island, Panama (AMNH), examined. First synonymized by Mello-Leitão, 1945b: 267.

**Description.** Female from Panama. Carapace, sternum orange. Legs dark brown. Abdomen orange-brown, lateral edges blackish, spines black. Carapace with three pairs of dimples and a circular thoracic depression. Dorsum of abdomen flat, with sclerotized disks and minute granulations, more distinct on venter; three thorns posteriorly on each side, and one on each lateral margin. Ring around spinnerets with anterior tubercle (Figs. 418, 419). Total length, 8.6 mm. Carapace, 3.4 mm long, 2.9 mm wide. First femur, 2.9 mm; patella and tibia, 3.2 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm. Second patella and tibia, 3.0 mm; third, 2.0 mm. Fourth femur, 3.2 mm; patella and tibia, 2.9 mm; metatarsus, 1.8 mm; tarsus, 0.7 mm.

Male. Coloration like female. Carapace with three pairs of dimples and a median thoracic depression (Fig. 423). First coxa with hook, second femur with groove. First leg with long macrosetae on first tibia, some longer macrosetae on second tibia; fourth femur with tubercles. Total length, 4.0 mm. Carapace, 1.9 mm long, 1.5 mm wide. First femur, 1.7 mm; patella and tibia, 1.8 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.5 mm; third, 1.0 mm. Fourth femur, 1.5 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm, tarsus, 0.4 mm.

**Variation.** Females vary in total length from 8.6 to 10.3 mm, males from 3.7 to 4.2 mm.

**Note.** Females and males have been collected together on Barro Colorado Island, Guyana and Suriname. The abdomen of half-grown females is like that of adults, with four spines on the edge of the flat abdomen.

**Diagnosis.** There are no other *Micrathena* females with a flat abdomen having

four pairs of thorns along the edge (Figs. 418, 419). The male is distinguished by the large sclerotized prong of the median apophysis (Fig. 424), and the flat paracymbium (Fig. 425).

**Natural History.** Specimens have been collected in forest savanna in Guyana and in forest in Suriname. An orb measured in Suriname by D. Smith had a diameter of 22 cm and was 85 cm above the ground.

**Distribution.** Panama to Peru, Amazon drainage (Map 6).

**Records.** PANAMA: *Prov. Panamá.* Barro Colorado Island (many records); Pipeline Road. VENEZUELA: *Est. Aragua.* Rancho Grande, 4♀ (MACN). GUYANA: *Bartica Distr.* Kartabo, ♀ (CUC); Mackenzie, Demerara River, ♀ (CUC). Mazaruni, Pakaraima Mts., ♀ (CUC). Minnehaha Creek, ♀ (CUC). Canje, Ikuruwa Riv., 3♀, ♂ (MCZ). SURINAME: Zanderij Isl., ♀ (CUC). *Saramacca.* Voltzberg-Raleighvallen Res., 9♀, ♂ (MCZ). Moengo, Cottica River, ♀ (CUC). Gordua, ♀ (ZMB). Paramaribo, ♀ (ZMB). FRENCH GUIANA: St. Laurent de Maroni, 3♀ (PAN). COLOMBIA: *Est. Vaupés.* Río Vaupés, ♀ (AMNH). *Caquetá.* Río Ortegua, 4♀ (AMNH). *Putumayo.* Río Putumayo, ca. Pto. Asis, ♀ (MCZ); San Antonio, Río Guamues, imm. (MCZ). *Nariño.* Barbacoas, ♀ (MCZ). ECUADOR: *Prov. Pichincha.* km 113 vía Pto. Quito, ♀, 3♂ (MECN). *Napo.* Río Napo, 2♀ (MCZ); R. F. Cuyabeno, 3♀ (MECN). PERU: *Dept. Amazonas.* Río Alto Marañón betw. Río Cenepa and Río Nieva, ♀ (AMNH). *Loreto.* Iquitos, 6♀ (MCZ). *San Martín.* Moyobamba, ♀ (AMNH). *Huánuco.* Divisoria, ♀ (AMNH); Cucharas, many ♀ (EPC). *Junín.* Amable María, ♀, ♂ (PAN). Río Bombo, Alto Tapiche, ♀ (AMNH). BRAZIL: *Est. Pará.* Canindé, Río Gurupi, ♀ (AMNH); Cachoeira, ♀ (ICSP); Belém, 2♀ (MACN, NMW); Santarém, ♀ (NMW); Río Tapajós, ♀ (INPA). *Amazonas.* Tefé, 2♀, ♂ (MCZ, IBSP); mouth of Rio Embira and Rio Jurua, ♀ (AMNH); 45 km N Manaus, ♀, ♂ (INPA); Manaus, 6♀, ♂ (MCZ, MZSP, IBSP, NRS, MEG); 20 km N Manaus, 2♀

(NRS); Rio Autás, Cururuzinho, 2♀ (NRS); Rio Negro, Umaritubo, 11♀ (NRS); Taracuaá, ♀ (NRS); Rio Autás, Capiranga, ♀ (NRS); Lago Jacaré, Rio Solimões, 2♀ (MZSP). *Rondônia*. Pôrto Velho, 2♀ (MCZ); Abunã, ♀ (MCZ); Vila Murinho, 3♀ (MCZ).

### The *triangularispinosa* Group

The *triangularispinosa* group is characterized in both sexes by a shiny, dome-shaped carapace having only an indistinct thoracic mark (Figs. 432, 433, 471, 473, 498, 499). The abdomen of females is subtriangular in all species (except trapezoidal *M. schenkeli* and *M. ucayali*). All except *M. ornata* have four to eight spines; all have a large anterior pair of spines overhanging the carapace and a large pair of dorsal, posterior spines (Figs. 433, 449, 481, 509). In addition there may be a pair of usually small lateral spines and a pair of small posterior spines. The epigynum is a large bulge with a small posteromedian lobe or tip. There is no transverse bar. The opening is a slit on the posterior face, of variable shape in most species (Figs. 434–436, 458–463).

Males have a shiny, dome-shaped carapace like females and a short, rectangular to trapezoidal abdomen (Figs. 437, 477, 495), slightly wider behind than in front. All lack a hook on the first coxa and the corresponding groove on the second femur. The palpus has a relatively straight to slightly curved embolus. A lobe in the center of the median face is assumed to be the paramedian apophysis, and a characteristic median apophysis is present, consisting of two almost equal sized areas, one overlapping the other, and both weakly sclerotized (Figs. 7, 438, 467, 496; except in *M. acuta* and *M. flaveola*, where the structure is simpler, Figs. 8, 504, 517). Secondarily some sclerites have been lost: the paramedian apophysis and the median apophysis.

Diagnostic features for females in the group are the number of abdominal spines, the shape of the sternum (Fig. 510), and

the shape of the epigynum and its lobe. In males, diagnostic features are the shape of the paracymbium (Figs. 455, 468, 479, 520) and the shape of the median apophysis (Figs. 7, 438).

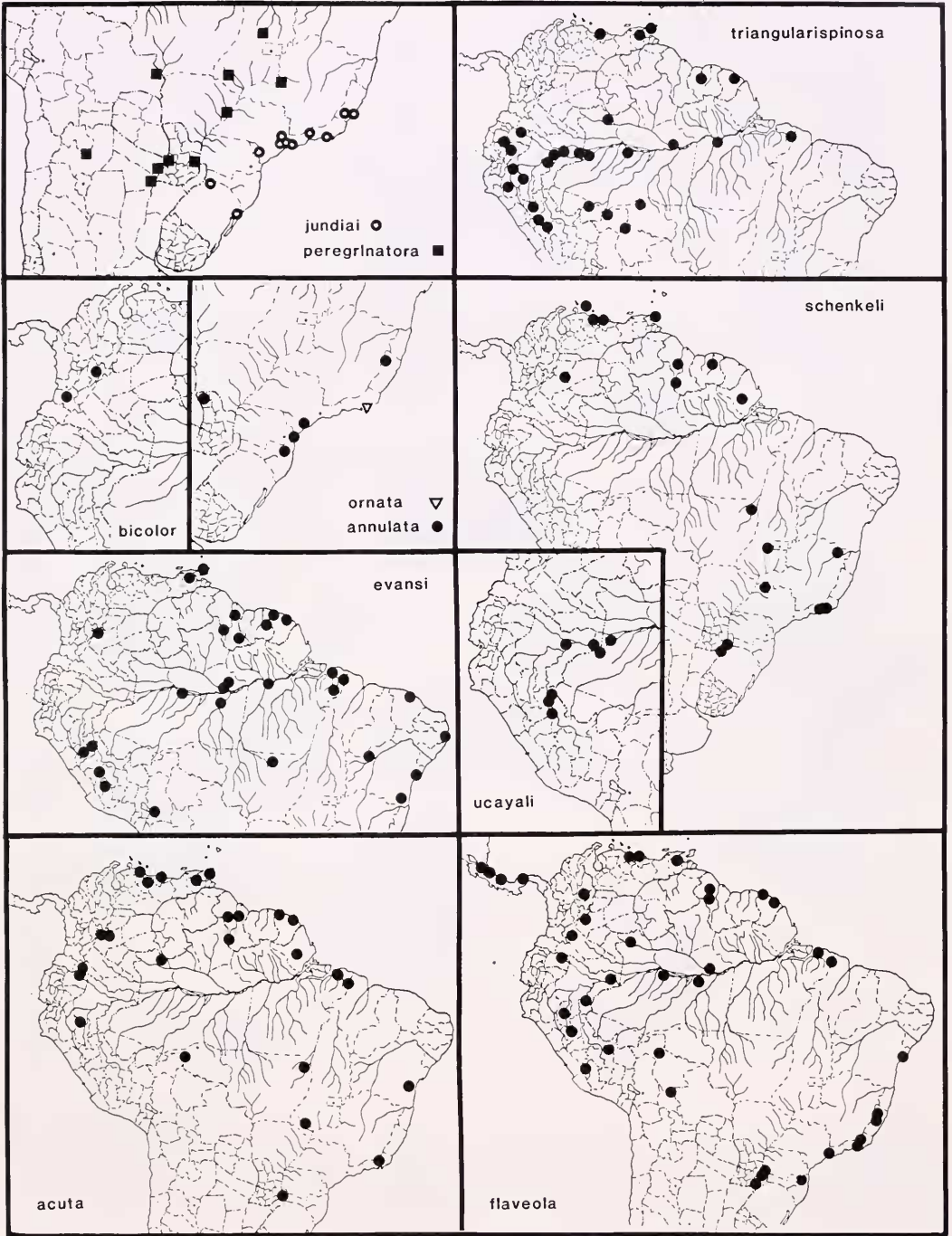
### KEY TO THE *TRIANGULARISPINOSA* GROUP

#### Females

- |       |  |                           |
|-------|--|---------------------------|
| 1.    | Sternum dome-shaped, bulging (Fig. 510)  | 2                         |
| -     | Sternum flat   | 3                         |
| 2(1)  | Six spines on abdomen (Figs. 498, 499);<br>widespread, Map 7   | <i>acuta</i>              |
| -     | Eight spines on abdomen (Figs. 508, 509);<br>widespread, Map 7   | <i>flaveola</i>           |
| 3(1)  | Abdomen with only the four large spines<br>(Figs. 426, 427); Est. Goiás, Brazil to<br>northern Argentina, Map 7  | <i>peregrinatora</i>      |
| -     | Abdomen with 6, 8 or 12 spines   | 4                         |
| 4(3)  | Abdomen with 12 spines (Fig. 522); south-<br>eastern Brazil, Map 7   | <i>ornata</i>             |
| -     | Abdomen with 6 or 8 spines   | 5                         |
| 5(4)  | Abdomen with 6 spines (figs. 440, 441, 456,<br>457, 480, 481)  | 6                         |
| -     | Abdomen with 8 spines (Figs. 448, 449,<br>471, 472, 490, 491)  | 8                         |
| 6(5)  | Abdomen with two pairs of relatively large<br>posterior spines (Figs. 480, 481); epigy-<br>num tip a semicircular lobe (Fig. 482)<br>often torn off (Fig. 485); widespread,<br>Map 7 | <i>schenkeli</i>          |
| -     | Abdomen with one pair of large posterior<br>spines and a pair of tiny lateral spines   | 7                         |
| 7(6)  | Epigynum tip tripartite (with two parax-<br>ial grooves, Fig. 434); southeastern Bra-<br>zil, Map 7  | <i>jundiai</i>            |
| -     | Epigynum tip entire, usually with a light<br>central area on posterior face (Fig. 459);<br>widespread, Map 7   | <i>evansi</i>             |
| 8(5)  | Anterior of epigynal bulge flat in profile<br>(Fig. 452); Colombia, Map 7  | <i>bicolor</i>            |
| -     | Epigynum with bulge rounded in profile<br>(Figs. 476, 494)   | 9                         |
| 9(8)  | Lower posterior spines almost as large as<br>upper posterior spines (Figs. 490, 491);<br>upper Amazon, Peru, Brazil, Map 7   | <i>ucayali</i>            |
| -     | Lower posterior spines smaller than upper<br>ones (Figs. 440, 441, 471, 473)   | 10                        |
| 10(9) | Epigynum in ventral view sculptured with<br>two paraxial grooves (Fig. 442); south-<br>eastern Brazil, Paraguay, Map 7   | <i>annulata</i>           |
| -     | Epigynum not so sculptured, with tiny lobe<br>(Fig. 474); widespread, Map 7  | <i>triangularispinosa</i> |

#### Males

Males of *M. ornata* and *M. peregrinatora* are unknown; male of *M. bicolor* uncertain association.



Map 7. Distribution of *Micrathena* species of the *triangularispinosa* group.

- 1. Tegulum of palpus bulging, extending distally (Figs. 504, 519) ..... 2
- Tegulum without distal bulge (Figs. 438, 454) ..... 3
- 2(1) Sculptured area of cymbium same size as facing paracymbium (Fig. 505); widespread, Map 7 ..... *acuta*
- Sculptured area of cymbium much larger than facing paracymbium (Figs. 8, 518, 520); widespread, Map 7 ..... *flaveola*
- 3(1) Cymbium with a proximal dorsal bulge (Figs. 488, 489); widespread, Map 7 ..... *schenkeli*
- Cymbium otherwise ..... 4
- 4(3) Paramedian apophysis a narrow, curved lobe (Figs. 438, 446, 469) ..... 5
- No such lobe present (Fig. 454); palpus as in Figures 454, 455 ..... suspected male of *bicolor*
- 5(4) Paracymbium pointed toward dorsum (Fig. 439); southeastern Brazil, Map 7 ..... *jundiai*
- Paracymbium otherwise ..... 6
- 6(5) Paracymbium with a concave surface toward dorsum (Figs. 466, 468, 470); widespread, Map 7 ..... *evansi*
- Paracymbium otherwise ..... 7
- 7(6) Paracymbium with a dorsal hook (Fig. 479); widespread, Map 7 ..... *triangularispinosa*
- Paracymbium otherwise ..... 8
- 8(7) Paracymbium as in Figure 497; upper Amazon, Peru, Brazil, Map 7 ..... *ucayali*
- Paracymbium as in Figure 447; southeastern Brazil, Paraguay, Map 7 ..... *annulata*

***Micrathena peregrinatora* (Holmberg)**  
 Figures 426–431; Map 7

*Acrosoma peregrinatorum* Holmberg, 1883: 232. Probably immature female type from Formosa, Argentina, lost.

*Micrathena peregrinatorum*:—Reimoser, 1917: 152. Roewer, 1942: 961. Bonnet, 1957: 2873.

**Description.** Female. Carapace orange-brown with a median gray streak. Sternum white, framed by some gray pig-

ment. Coxae darker; distal leg articles orange-brown with longitudinal dusky lines. Dorsum of abdomen with black and white patches, sides with dorsoventral lines of white patches with gray; venter white and gray patches. Carapace evenly domed, with indistinct thoracic depression. Abdomen triangular with four spines, two overhanging carapace and two posterior (Figs. 426, 427). Total length, 6.0 mm. Carapace, 2.4 mm long, 1.9 mm wide. First femur, 1.9 mm; patella and tibia, 1.9 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 1.8 mm; third, 1.4 mm. Fourth femur, 2.5 mm; patella and tibia, 1.9 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm.

**Variation.** Females vary in total length from 5.7 to 5.9 mm. Some individuals have a minute pair of spines underneath the posterior ones.

**Note.** The male is unknown.

**Diagnosis.** The presence of only four spines (Figs. 426, 427) separates this species from all others of the *triangularispinosa* group.

**Distribution.** Southern Brazil to northern Argentina (Map 7).

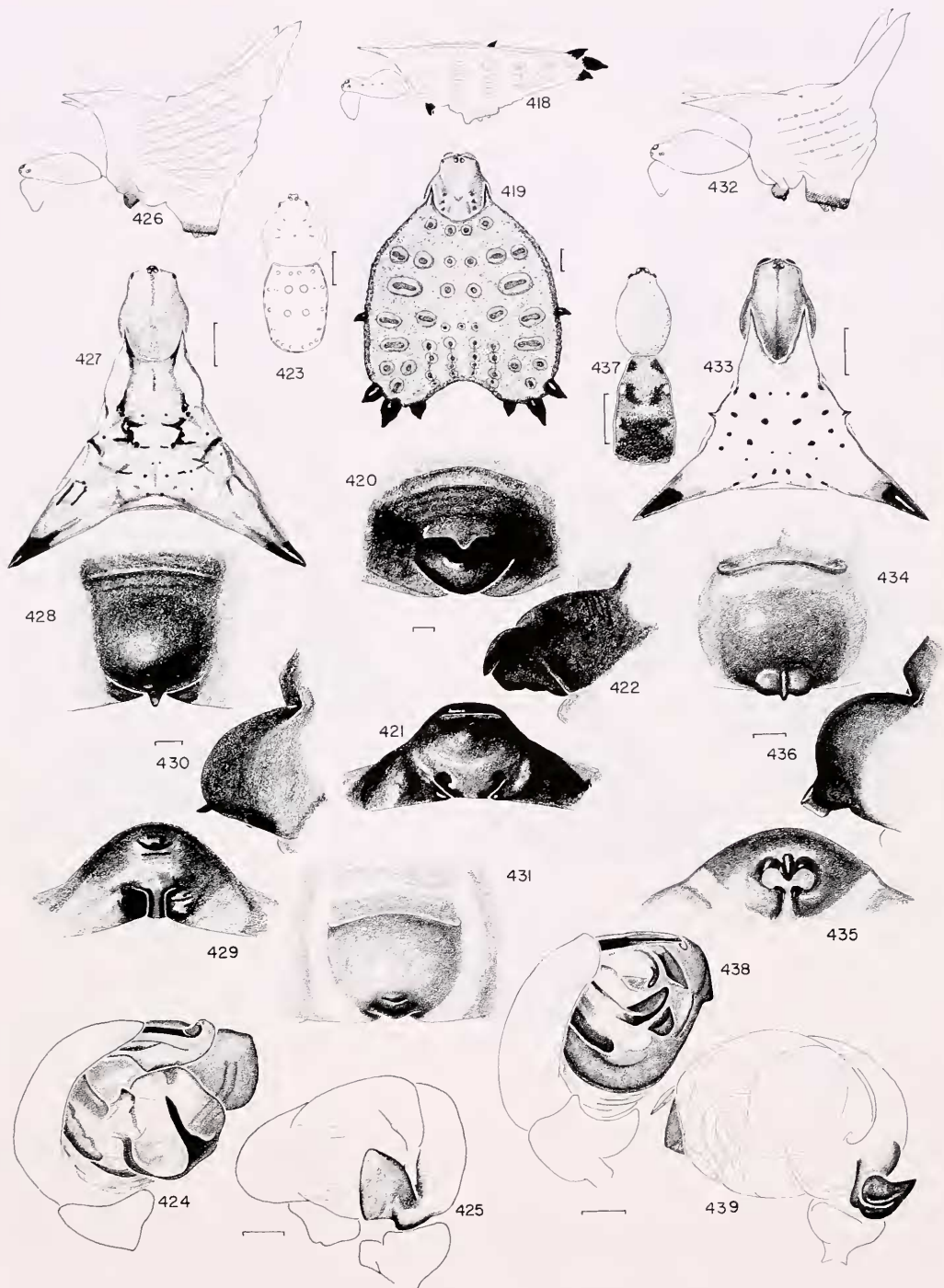
**Records.** BRAZIL: *Est. Goiás*. Corumbá, Aug. 1952, ♀ (F. Lane, MZSP); Jataí, Oct. 1962, 4♀ (Exp. MZSP). *Minas Gerais*. Cachoeira do Marimbondo, 4 March 1965, ♀ (Vizotto, MZSP). *Mato Grosso do Sul*. Três Lagoas, Nov. 1966, ♀ (F. Lane, MZSP), 28 July 1965, ♀ (K. Lenko, MZSP). PARAGUAY: 1891–1893, ♀ (Dr. Bohls, BMNH). *Dept. Central*. Aregua, 18 Feb. 1982, ♀ (B. Barrios, JAK). *Alto Paraná*. Itaipu, imm. (AMNH). ARGENTINA: *Prov. Salta*. Salta, 1907, 2♀ (E. Rei-

Figures 418–425. *Micrathena clypeata* (Walckenaer). 418–422. Female. 418. Lateral. 419. Dorsal. 420. Epigynum, ventral. 421. Epigynum, posterior. 422. Epigynum, lateral. 423–425. Male. 423. Dorsal. 424. Left palpus, mesal. 425. Palpus, lateral.

Figures 426–431. *Micrathena peregrinatora* (Holmberg), female. 426. Lateral. 427. Dorsal. 428. Epigynum, ventral. 424. Epigynum, posterior. 430. Epigynum, lateral. 431. Epigynum with lobe torn off.

Figures 432–439. *Micrathena jundiai* n. sp. 432–436. Female. 432. Lateral. 433. Dorsal. 434. Epigynum, ventral. 435. Epigynum, posterior. 436. Epigynum, lateral. 437–439. Male. 437. Dorsal. 438. Palpus, mesal. 439. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 418, 419, 423, 426, 427, 432, 433, 437, 1.0 mm.



moser, NMW). *Chaco*. Resistencia, July 1934, ♀ (Hayward, MZSP).

*Micrathena jundiai* new species  
Figures 432–439; Map 7

*Holotype*. Female and immature paratype from São Paulo [Enenheiro Marsilac, Est. São Paulo], Brazil, 27 Nov. 1960 (no. 8307, MZSP). The name is a noun in apposition after Jundiai, a collecting site near São Paulo.

*Description*. Female. Carapace yellow, darker in midline and on sides. Sternum white with black line on each side. Coxae yellowish. Legs yellowish, distally brown with darker longitudinal streaks. Dorsum of abdomen whitish; posterior dorsal spines black; venter with black patch between epigynum and spinnerets; sclerotized areas brown. Carapace without thoracic depression. Posterior median eyes twice diameter of anterior medians; anterior laterals 1.2 diameters; posterior laterals subequal to anterior median eyes. Abdomen subtriangular with six spines (Figs. 432, 433). Total length, 5.3 mm. Carapace, 2.2 mm long, 1.7 mm wide. First femur, 2.0 mm; patella and tibia, 2.2 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.6 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm.

Male from Rio de Janeiro. Carapace, sternum dark brown. Sternum with orange transverse mark anteriorly. Coxae orange, distal articles of legs brown. Dorsum of abdomen orange-brown with five white spots and indistinct black patches; venter black. Carapace smooth without depression. Posterior median eyes twice the diameter of anterior medians; laterals subequal to anterior median eyes. No coxal hook. Abdomen trapezoidal (Fig. 437). Total length 3.9 mm. Carapace, 1.8 mm long, 1.1 mm wide. First femur, 1.3 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm; tarsus, 0.5 mm. Second patella and tibia, 1.0 mm; third, 0.8 mm. Fourth femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm.

*Variation*. Females vary in total length

from 5.3 to 7.0 mm, males from 3.2 to 4.2 mm.

*Note*. Males and females have been collected together at several localities.

*Diagnosis*. The female is separated from other six-spined species by the sculpturing of the epigynum (Figs. 434, 435). *Micrathena annulata*, with similar sculpturing, has eight spines.

*Distribution*. Southeastern Brazil (Map 7).

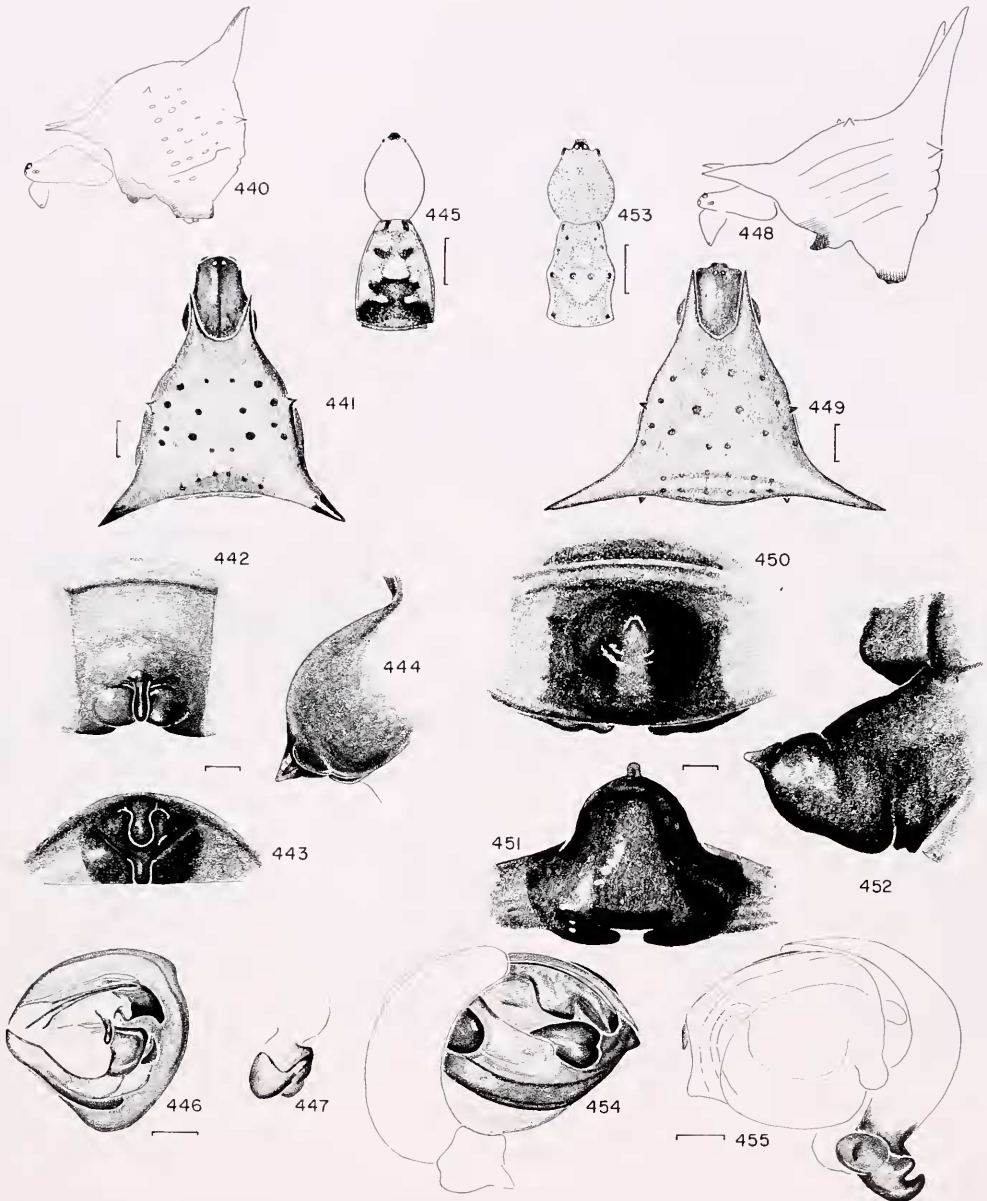
*Paratypes*. BRAZIL: *Est. Espírito Santo*. Castelo, Nov. 1976, 2♂ (M. Alvarenga, AMNH); Guarapari, 12 Oct. 1943, ♂ (Soares, MZSP). *Rio de Janeiro*. Floresta dos Macacos, April 1961, 2♂ (M. Alvarenga, AMNH); Sumare, 200–300 m, Feb. 1946, 3♀ (H. Sick, AMNH); Paineiras, 30 March 1983, ♀ (H. and L. Levi, MCZ); Represa Rio Grande, Feb. 1976, ♂ (M. Alvarenga); Itatiáia, Dec. 1966, ♀ (H. Reichardt, MZSP). *São Paulo*. Itu, 2 Feb. 1959, ♀, ♂ (F. Lane, AMNH); Caraguatubá, May 1962, ♀ (MZSP); Salesópolis, 1 Feb. 1961, ♀, ♂ (K. Lenko, MZSP); Jundiai, Nov. 1976, ♀ (A. Schneble, MCZ); Iporanga, 1 Nov. 1961, ♀, ♂ (Lenko and Reinhardt, MZSP); Ilho São Sebastião, 1 Feb. 1952, ♂ (Werner, MZSP); São Paulo, 27 Nov. 1960, ♀ (Werner, MZSP); São Sebastião, 3 June 1961, 2♀ (K. Lenko, MZSP). *Rio Grande do Sul*. Torres, 21 Nov. 1976, ♂ (A. Lise, FZRS); Iraí, 20 Nov. 1975, 7♀, ♂, imm. (A. Lise, FZRS).

*Micrathena annulata* Reimoser  
Figures 440–447; Map 7

*Micrathena annulata* Reimoser, 1917: 149, pl. 9, fig. 31, ♀. Roewer, 1942: 953. Bonnet, 1957: 2861. Nine female, one juvenile syntypes from Est. Santa Catarina, Brazil (ZMW), examined. Roewer, 1942: 653. Bonnet, 1957: 2861.

*Description*. Female from Paraguay. Carapace, head dark brown, thoracic area with median narrow longitudinal dark band; posterior and sides of thorax dark brown; other areas lighter brown. Sternum brown. Legs brown with longitudinal dark, dusky stripes on tibiae. Dorsum of abdomen yellow-white, posterior spines black; venter black. Carapace high, shiny,





Figures 440–447. *Micrathena annulata* Reimoser. 440–444. Female. 440. Lateral. 441. Dorsal. 442. Epigynum, ventral. 443. Epigynum, posterior. 444. Epigynum, lateral. 445–447. Male. 445. Dorsal. 446. Left palpal bulb, mesal. 447. Paracymbium, mesal.

Figures 448–455. *Micrathena bicolor* (Keyserling). 448–452. Female. 448. Lateral. 449. Dorsal. 450. Epigynum, ventral. 451. Epigynum, posterior. 452. Epigynum, lateral. 453–455. Male. 453. Dorsal. 454. Palpus, mesal. 455. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 440, 441, 445, 448, 449, 453, 1.0 mm.

evenly curved, without any depression. Abdomen with one small spine on each side between anterior and posterior spines and one pair below posterior spines (Figs. 440, 441). Total length, 6.3 mm. Carapace, 2.4 mm long, 1.9 mm wide. First femur, 2.2 mm; patella and tibia, 2.2 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 2.1 mm; third, 1.4 mm. Fourth femur, 2.7 mm; patella and tibia, 2.2 mm; metatarsus, 1.5 mm; tarsus, 0.7 mm.

Male. Carapace dark brown. Sternum with black and white pigment. Coxae colorless; distal leg articles darker. Dorsum of abdomen spotted white. Carapace domed, without thoracic mark. No coxal hook. Total length, 4.1 mm. Carapace, 1.9 mm long, 1.2 mm wide. First femur, 1.4 mm; patella and tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.3 mm; third, 0.9 mm. Fourth femur, 1.7 mm; patella and tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 4.8 to 6.3 mm.

*Note.* The only male in collection was with six immatures, and had both palps expanded, thus drawings could be made only of the bulb without cymbium (Fig. 446), and of the paracymbium (Fig. 447), these perhaps not in comparative positions.

*Diagnosis.* This species can be separated from others of the *triangularispinosa* group with eight spines by the sculpturing of the epigynum (Figs. 442, 443), which is like that of the six-spined *M. jundiai*. The paracymbium of the male (Fig. 447) is distinct.

*Distribution.* Southern Brazil (Map 7).

*Records.* BRAZIL: *Est. Espírito Santo.* Rio São José, 14 Sept. 1942, ♀ (B. Soares, MZSP). *São Paulo.* Juquiá, 21–26 Aug. 1949, 6 imm., ♂ (F. Lane, MZSP). *Paraná.* Paranaguá, ♀ (MNRJ). PARAGUAY: *Concepción.* Territory Foncière, 2♀ (E. Reimoser, MCZ).

*Micrathena bicolor* (Keyserling)  
Figures 448–455; Map 7

*Acrosoma bicolor* Keyserling, 1863: 73, pl. 2, fig. 6.

Two female syntypes from Bogotá, Colombia (BMNH), examined. 1892: 20, pl. 1, fig. 16, ♀.

*Micrathena caucensis* Strand, 1908: 4. Female holotype from Popayán, Dept. Cauca, Colombia (SMF), examined. NEW SYNONYMY.

*Micrathena bicolor*:—Reimoser, 1917: 151. Bonnet, 1957: 2862.

*Synonymy.* Strand's specimen appears to be the only other female of *M. bicolor* in collections.

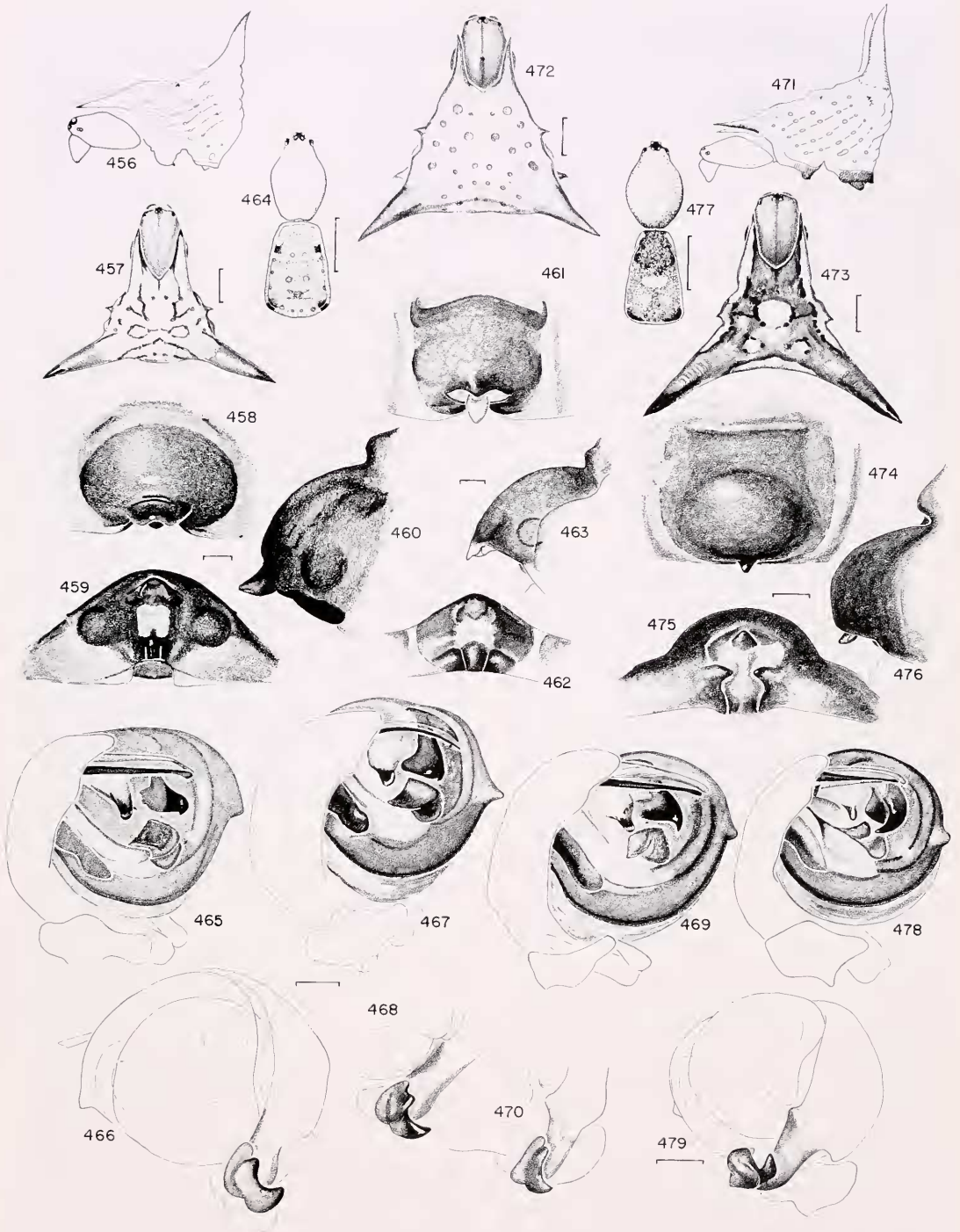
*Description.* Female. Carapace brown; sides of thorax yellow-brown; sternum black. Legs yellow, distal articles brown. Dorsum of abdomen yellow, without any black or white pigment spots; sides with black longitudinal bands along grooves, broken by yellow ridges; venter with black band having almost parallel sides, from pedicel to spinnerets. Sclerotized area of spinnerets brown-black. Carapace high and shiny, without thoracic depression. Abdomen with eight spines (Figs. 448, 449). Total length, 6.5 mm. Carapace, 2.5 mm long, 2.2 mm wide. First femur, 2.3 mm; patella and tibia, 2.4 mm; metatarsus, 1.5 mm; tarsus, 0.7 mm. Second patella and tibia, 2.2 mm; third, 1.6 mm. Fourth femur, 3.2 mm; patella and tibia, 2.6 mm; metatarsus, 1.8 mm; tarsus, 0.8 mm.

Male from Peru. Carapace shiny dark

Figures 456–470. *Micrathena evansi* Chickering. 456–463. Female. 456. Lateral. 457. Dorsal. 458, 461. Epigynum, ventral. 459, 462. Epigynum, posterior. 460, 463. Epigynum, lateral. 458–460. (Trinidad, West Indies). 461–463. (Tefé, Brazil; doubtful if *M. evansi*). 464–470. Male. 464. Dorsal. 465, 467, 469. Left palpus, mesal. 466. Palpus, lateral. 468, 470. Paracymbium, lateral. 465, 466. (Santarém, Brazil). 467, 468. (Trinidad, West Indies). 469, 470. (Huánuco, Peru).

Figures 471–479. *Micrathena triangularispinosa* (De Geer). 471–476. Female. 471. Lateral. 472, 473. Dorsal. 474. Epigynum, ventral. 475. Epigynum, posterior. 476. Epigynum, lateral. 477–479. Male. 477. Dorsal. 478. Palpus, mesal. 479. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 456, 457, 464, 471–473, 477, 1.0 mm.



brown, with lighter median line posteriorly. Sternum orange with black and white pigment marks. Legs brown. Dorsum of abdomen orange-brown with lighter triangular area, round lighter area anterior to it, and black paired marks on sides (Fig. 453); sides black, venter light orange-brown. Carapace with indistinct thoracic mark, evenly curved. First coxa without hook. Sides of abdomen slightly wavy (Fig. 453). Total length, 3.9 mm. Carapace, 1.9 mm long, 1.2 mm wide. First femur, 1.1 mm; patella and tibia, 1.2 mm; metatarsus, 0.6 mm; tarsus, 0.4 mm. Second patella and tibia, 1.0 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.0 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm.

*Note.* The placement of the male with *M. bicolor* is uncertain. Both come from intermediate altitudes.

*Diagnosis.* This species differs from all others by the extreme bulge of the epigynum, best seen in profile (Fig. 452), having its anterior face flat and at right angles to the body axis.

*Record.* PERU: Dept. Junín. Amable María, ♂ (K. Jelski, PAN).

### *Micrathena evansi* Chickering Figures 456–470; Map 7

*Micrathena evansi* Chickering, 1960c: 77, figs. 41–45, ♂. Male holotype from Santarém forest, Est. Pará, Brazil (BMNH), examined.

? *Micrathena insolita* Chickering, 1961: 428, figs. 94–98, ♀. Juvenile female holotype from Portobello, Panama (MCZ), examined. DOUBTFUL NEW SYNONYMY.

*Micrathena lepida* Chickering, 1964: 264, figs. 30–34, ♀. Female holotype from Port of Spain, Trinidad, Lesser Antilles (MCZ), examined. NEW SYNONYMY.

*Micrathena levii* Chickering, 1964: 267, figs. 35–40, ♂. Male holotype from Simla, Trinidad, Lesser Antilles (AMNH), examined. NEW SYNONYMY.

*Synonymy.* No older name has been found for this species. *Micrathena lepida* is the female of *evansi* (Figs. 465, 466, illustrated from holotype); *M. levii* (Figs. 467, 468, illustrated from holotype) has a similar paracymbium; the differences of

other sclerites in the palpus are probably due to geographic variation.

*Micrathena insolita* is not a recently molted adult, as Chickering thought, but an immature. Last instar immatures in this group have often a small tip in the epigynal area, of the size of this individual's. It has also small, very weakly sclerotized seminal receptacles. This might be an immature of *M. evansi*, but there are several related six-spined species. Only collecting at the type locality and finding adults will ascertain the synonymy.

*Description.* Female. Carapace, legs orange-brown. Sternum white. Dorsum of abdomen white with tip of spines black. Carapace high, domed. Abdomen with two anterior spines overhanging carapace, two posterolateral spines and a small spine on each side in between (Figs. 456, 457). Total length, 5.4 mm. Carapace, 2.3 mm long, 1.7 mm wide. First femur, 2.2 mm; patella and tibia, 2.0 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.7 mm; patella and tibia, 2.0 mm; metatarsus, 1.9 mm; tarsus, 0.6 mm.

Male from Trinidad. Carapace orange-brown, sternum lighter orange with some black pigment. Legs orange-brown. Dorsum of abdomen with white spots and black patches. Carapace without thoracic mark. First coxa without hook. Abdomen trapezoidal, curved posteriorly (Fig. 464). Total length, 3.9 mm. Carapace, 1.8 mm long, 1.2 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.6 mm; tarsus, 0.4 mm. Second patella and tibia, 1.1 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.0 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

*Variation.* Total length of females varied from 4.9 mm to 7.2 mm, males from 3.4 to 4.0 mm. Some specimens have an indistinct thoracic mark. Most females have an epigynum as in Figures 458–460. A few females have a pointed tip (Fig. 461) and were first thought to be a distinct species until intermediates were found. Does the scape break off in some, or is it

just absent? Considerable variation in the shape of seminal receptacles prevented the use of this character to separate specimens with truncate tip of the epigynum from those with pointed tip. Some females have a small tubercle or minute spine below the large posterolateral spine on the abdomen. Are they hybrids of *triangularispinosa*? Individual sclerites on the conductor and median apophysis of male palpi are also quite variable in shape (Figs. 465, 467, 469), but the paracymbium is similar (Figs. 466, 468, 470).

*Note.* Male and female have been collected together by M. E. Galiano in Belém. For a while it was thought the male belonged to *M. triangularispinosa*, but males and females of *M. evansi* are common in Trinidad; *M. triangularispinosa* are not.

*Diagnosis.* *Micrathena evansi* females differ from other species with an arched carapace and flat sternum by having only six abdominal spines. Also, there is usually a light patch behind the truncate to pointed tip on the epigynum (Fig. 459). Males can be separated from those of *M. triangularispinosa* by the concave side of the paracymbium (Figs. 466, 468, 470).

*Natural History.* The species has been collected in forest savanna in Guyana and in forest at Belém.

*Distribution.* Trinidad, widespread in South America (Map 7).

*Records.* LESSER ANTILLES: *Trinidad*. Mt. St. Benedict, ♀ (AMNH); Maracas Valley, 3♀ (AMNH, BMNH); Port of Spain, 2♀ (MCZ). VENEZUELA: *Est. Monagas*. Caripito, sev. 3♀, ♂ (AMNH). GUYANA: Canje Ikuruwa River, ♀, ♂ (AMNH); nr. Yupukari, Rupununi Riv., ♀ (AMNH); Essequibo River, ♀ (BMNH). SURINAME: *Marowijne Distr.* Benzdorp, Lawa River, ♂ (AMNH). FRENCH GUIANA: St. Laurent de Maroni, 7♀ (PAN); Cayenne, 4♂ (PAN), 2♀ (MCZ). COLOMBIA: *Dept. Meta*. Villavicencio, 9♀ (AMNH). PERU: *Dept. Huánuco*. nr. Pucallpa, ♀ (AMNH); 80 km NE of Huánuco, 3,000 m, ♂ (CAS). *Junín*. Amable

María, 3♂ (PAN). *Ayacucho*. Monterrico, 2♀ (PAN). BRAZIL: *Est. Pará*. Canindé, Rio Gurupi, 10♀ (AMNH); Belém, 9♀, 2♂ (MNRJ, MCZ); Jacare-Acanga, ♀ (AMNH); Santarém, 9♀ (BMNH); forest, Santarém, 8♀ (BMNH); km 305 Rodovia Belém-Brasília, 3°10'S, 47°30'W, 8♀ (MZSP). *Amazonas*. Rio Autaz, Capiroanga, 2♀ (NRS); Manaus, Reserva Ducke, ♂ (MEG); 30 km NE Manaus, ♀ (INPA); Tefé (BMNH); Rio Autás, Sa. Amelia, ♂ (NRS); Umarituba, Rio Negro, ♀ (NRS). *Ceará*. ♀ (MCZ). *Pernambuco*. Mamanguape, ♀ (MZSP). *Mato Grosso*. Xingu, Jacare, 8♀ (AMNH). *Bahia*. Salvador, ♂ (AMNH); Uruçuca, 2♀ (FZRS); Camacari, ♀ (FZRS); Itamarajá, ♀ (FZRS). *Espírito Santa*. Sooretama [?], ♀ (MZSP). BOLIVIA: *Dept. La Paz*. Chulmani, 1,700 m, Tungas, 2♀ (MCZ).

*Micrathena triangularispinosa* (De Geer)  
Figures 471–479; Map 7

*Aranea triangularispinosa* De Geer, 1778: 321, pl. 39, figs. 9, 10, ♀. Female from Suriname (NRS), examined.

*Acrosoma rufa* Taczanowski, 1873: 265, pl. 5, fig. 20, ♀. Female holotype from Cayenne, French Guiana (PAN), examined. NEW SYNONYMY.

*Acrosoma acutooides* Taczanowski, 1879: 114, pl. 1, fig. 31, ♀. Female holotype from Amable María [Dept. Junín], Peru (PAN), examined. NEW SYNONYMY.

*Micrathena perlata*.—Simon, 1895: 852. Male paratype here designated (not lectotype), from São Paulo de Olivença [Est. Amazonas, Brazil] (no. 244, MNHN), examined.

? *Micrathena mathani* Simon, 1897b: 468. Female from São Paulo de Olivença [Amazonas, Brazil] and Pebas, Peru (MNHN), lost. NEW SYNONYMY.

*Micrathena dahli* Reimoser, 1917: 150, pl. 9, fig. 32, ♀. Four female syntypes from Caracas, Venezuela (two damaged) (NMW), examined. Roewer, 1942: 956. Bonnet, 1957: 2865. NEW SYNONYMY.

*Micrathena acutooides*.—Roewer, 1942: 953. Bonnet, 1957: 2861.

*Micrathena munsonae* Archer, 1971: 158, fig. 8, ♀. Female holotype from Moyobamba, Peru (AMNH), examined. NEW SYNONYMY.

*Micrathena spinosa*.—Roewer, 1942: 964 (in part). Bonnet, 1957: 2879 (in part).

*Synonymy.* A pinned specimen of De Geer's *triangularispinosa* was found in the

Natural History Museum, Stockholm. Most of the exoskeleton of the abdomen, including the venter of the epigynum, appeared to have been nibbled away by dermestid beetles. It was carefully placed into detergent and then into alcohol, but unfortunately fell apart. The shape of the carapace, sternum and seminal receptacles still visible make it fairly certain that it is this species. Linnaeus' *A. spinosa* is not the same, as thought by Reimoser and others, since *A. spinosa* is described by Linnaeus as having eight dorsal spines, the last pair extending posteriorly. *Micrathena mathani* is described as having a flat sternum and eight abdominal spines; *M. dahli* also has eight spines. Both are this species.

*Description.* Female from Peru. Carapace orange-brown with median dark line, sides dark. Sternum orange with white pigment. Femora of legs orange, distal articles black. Abdomen, dorsum white or with black pigment (Figs. 472, 473); sides with black grooves, forming black lines; venter with dark brown sclerotized areas. Carapace evenly domed. Abdomen with two anterior spines overhanging carapace, two large posterolateral spines, and small spine in between on each side; posteriorly, another pair of smaller spines below large spine (Figs. 471, 472). Total length, 5.5 mm. Carapace, 2.0 mm long, 1.6 mm wide. First femur, 2.0 mm; patella and tibia, 2.0 mm; metatarsus, 1.2 mm; tarsus, 0.7 mm. Second patella and tibia, 1.7 mm; third, 1.2 mm. Fourth femur, 2.5 mm; patella and tibia, 1.8 mm; metatarsus, 1.3 mm; tarsus, 0.7 mm.

Male from Est. Pará, Brazil. Carapace, legs dark brown, sternum brown. First two pairs of coxae brown, third and fourth yellow-white. Dorsum of abdomen black with a median white patch and several pairs of light patches; venter black. Carapace with very indistinct shallow thoracic mark. Coxal hook absent. Abdomen trapezoidal, sides slightly convex (Fig. 477). Total length, 3.8 mm. Carapace, 1.8 mm long, 1.2 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatar-

sus, 0.6 mm; tarsus, 0.4 mm. Second patella and tibia, 1.0 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.1 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 5.0 to 6.9 mm, males from 3.8 to 3.9 mm. Females often have a contrasting pattern on the abdomen (Fig. 473); sometimes this is absent. The sternum may be white or brown. The tip of the epigynum is quite variable; it is always subtriangular and located on the posterior slope of the bulge. Sometimes the tip has a slight ridge; sometimes it is minute or completely absent (perhaps torn off).

*Note.* Females have been collected with males in Manaus by M. E. Galiano (but also with a male of *M. evansi*). Males and females have also been collected in the Monsón Valley, Peru.

*Diagnosis.* This eight-spined species differs from *M. flaveola* by the flat sternum, and from *M. evansi* by having one more pair of spines, and in the structure of the epigynum (lacking a light area on the posterior face). The paracymbium of the male is more complex than that of *M. evansi*: it lacks the concave surface (Fig. 479), and the curved conductor encloses a sclerotized dark structure (Fig. 478), not present in *M. evansi*.

*Distribution.* Trinidad to Bolivia (Map 7).

*Records.* LESSER ANTILLES: *Trinidad.* ♀ (MCZ). VENEZUELA: *Est. Monagas.* Caripito, ♀ (AMNH). GUYANA: *Bartico Distr.* Kartabo, ♀ (CUC). SURINAME: *Saramacca.* Voltzberg-Raleighvallen Nature Res., 2♀ (MCZ). FRENCH GUIANA: Cayenne, ♀ (PAN). COLOMBIA: *Dept. Amazonas.* Leticia, ♀ (CNC). ECUADOR: *Prov. Napo.* R. F. Cuyabeno, ♀ (MECN). *Tungurahua.* Río Topo, 5♀, 3 juv. (EPC). *Morena-Santiago.* Taisha, 530 m, ♀ (MCZ). *Pastaza.* Yacu, 900 m, ♀ (MCZ). PERU: *Dept. Loreto.* Iquitos, 9♀ (AMNH, MCZ); Estiron, Río Ampiacu, ♀ (AMNH); Río Samiria, ♀ (AMNH). *San Martín.* 2 km NE Moyobamba, Mishqui-yacu, 1,600 m, 12 ♀, 2 imm. (AMNH).

*Amazonas*. Río Alto Marañón betw. Río Campa and Río Nieva, ♀ (AMNH). *Cajamarca*. Pacanga, ♀ (BMNH). *Huánuco*. Tingo María, 18♀ (AMNH, EPC); Monsón Valley, Tingo María, ♀, ♂ (CAS); Huallaga River, 600 m, ♀ (EPC); Cucharas, Huallaga Valley, 9♀, 2 imm. (EPC); Divisoria, ♀ (AMNH). *Pasco* [?]. Cam. del Pechis [? Cam. al Pichis, Pasco, 10°58'S, 75°13'W], ♂ (CUC). *Junín*. Valle Chanchamayo, 800 m, ♀ (EPC). *Madre de Dios*. Iberia, ♂ (AMNH). BRAZIL: *Est. Amazonas*. Igarape Belém, nr. confluence with Rio Solimões, ♀ (AMNH); Manaus, 2♀, 2♂ (MEG); Tefé, 2♀ (BMNH, MCZ); Umarituba, Rio Negro, ♀ (NRS); Rio Purus, Ilyutanaka, ♀ (NRS). *Acre*. Rio Purus, NW Sena Madureira, ♀ (MCZ); Abunã, ♀ (MCZ). *Rondônia*. Pôrto Velho, ♀ (MCZ). *Pará*. Rio Gurupi, 5♀ (AMNH); Forest Santarém, ♀ (BMNH); Canindé, 4♀ (AMNH); 50 km E Gurupi, ♂ (AMNH). *Bahia*. Uruça [?], ♀ (FZRS). BOLIVIA: *Prov. Beni*. Chacobo Indian village, Río Benicito, 2♀ (AMNH).

*Micrathena schenkeli* Mello-Leitão  
Figures 480–489; Map 7

*Micrathena schenkeli* Mello-Leitão, 1939: 71, figs. 51–53, ♀. Female holotype from Paraguay (NMB), examined.

*Micrathena gamma* di Caporiacco, 1947: 26. Male type from Port Diamond [Great Diamond], British Guiana [Guyana] (MZUF), examined. 1948: 669, fig. 82, ♂. NEW SYNONYMY.

*Micrathena browni* Chickering, 1960: 70, figs. 15–20, ♂. Male holotype from St. Diamond [Great Diamond], British Guiana [Guyana] (BMNH), examined. NEW SYNONYMY.

*Micrathena gentilicia* Chickering, 1964: 259, figs. 17–22, ♀. Female holotype from Trinidad, West Indies (MCZ), examined. NEW SYNONYMY.

*Micrathena praeiterita* Chickering, 1964: 274, figs. 57–63, ♀. Female holotype from St. Augustine, Trinidad, Lesser Antilles (AMNH), examined. NEW SYNONYMY.

*Synonymy*. Chickering named the species three times: the male *M. browni*; *M. gentilicia*, a female having the tip of the epigynum torn off; and *M. praeiterita*, a virgin female with the epigynum undamaged. *Micrathena gamma* di Caporiacco is also a male.

*Description*. Female from Trinidad.

Carapace dusky orange-brown. Sternum orange-yellow with some black pigment dots. Legs orange-brown. Dorsum of abdomen with white patches and some black areas; sides black; rows of white patches down sides; venter black with paired white patches. Carapace evenly arched, with shallow thoracic depression. Abdomen has six large, blunt spines (Figs. 480, 481). Total length, 4.5 mm. Carapace, 1.8 mm long, 1.2 mm wide. First femur, 1.4 mm; patella and tibia, 1.5 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm. Second patella and tibia, 1.4 mm; third, 0.9 mm. Fourth femur, 1.7 mm; patella and tibia, 1.5 mm; metatarsus, 1.0 mm; tarsus, 0.6 mm.

Male from Minas Gerais. Carapace, sternum, legs brownish black. Abdomen with a median dorsal white mark and three pairs of white marks on the anterior edge; venter black. Carapace arched with a faint, indistinct longitudinal depression. Abdomen trapezoidal, posterior edge slightly curved (Fig. 487). Total length, 4.5 mm. Carapace, 2.2 mm long, 1.4 mm wide. First femur, 1.3 mm; patella and tibia, 1.5 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.9 mm. Fourth femur, 1.7 mm; patella and tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.6 mm.

*Variation*. Females vary in total length from 4.5 to 6.2 mm, males from 4.5 to 5.0 mm. Some specimens, males and females, have almost no thoracic mark; in others this is present or is a very shallow groove (Fig. 487). The cymbium of the male palpus is widened and drawn out proximally (Figs. 488, 489), but in no two specimens does it have the same shape.

*Note*. Males and females were associated because they were both collected at Pedra Azul, Minas Gerais and Ondo Verde, São Paulo.

The wide semicircular lobe of the epigynum (Fig. 482) tears off when mating; most specimens lack this.

*Diagnosis*. The females can be separated from other species having an arched carapace by the six heavy abdominal spines (Fig. 481) and by having an epig-

ynum with a large semicircular lobe (Fig. 482). Usually this lobe is missing, and there is a divided depression (Figs. 485, 486).

The male differs from others having an indistinct thoracic depression by the proximally drawn out cymbium of the palpus (Figs. 488, 489) and the hook-shaped conductor (Fig. 488). The carapace of the male is less shiny than that of related species.

*Natural History.* Females were collected in Colombia in grass, brush along fence.

*Distribution.* Trinidad, Lesser Antilles, Colombia, Guyana to Paraguay (Map 7).

*Records.* LESSER ANTILLES: *Trinidad.* ♀ (N. Weber, MCZ); Balandra Bay, April 1922, 2♀ (Reynolds, MCZ); St. Augustine, 18 Sept. 1946, 15♀ (R. H. Montgomery, AMNH). *Curaçao.* ♀ (ZMK). VENEZUELA: *Est. Carabobo.* Bahia Patanemo, ♂ (MACN). *Distr. Fed.* Caracas, ♀ (NMW). GUYANA: Essequibo, 1895, ♀ (ZMK). SURINAME: Browns Berg, May 1984, ♀ (D. Smith, MCZ). COLOMBIA: *Meta.* Carimagua, 100 m el., Oct. 1973, 2♀ (W. Eberhard, MCZ). BRAZIL: *Terr. Amapá.* Serra do Navio, June 1966, ♀ (M. E. Galiano, MEG). *Est. Mato Grosso.* Barra do Tapirapé, Jan. 1966, ♀ (J. Malkin, MZSP). *Goiás.* Jaraguá, 12 June 1942, ♀ (F. Lane, MZSP). *Minas Gerais.* Pedra Azul, Dec. 1970, 3♀, 2♂ (F. M. Oliveira, AMNH). *Rio de Janeiro.* Duque de Caxias, Sept. 1961, 2♀ (M. Alvarenga, AMNH); Mangaratiba, Feb. 1976, ♂ (M. Alvarenga, AMNH). *São Paulo.* Onda Verde, Jan. 1946, ♀, ♂ (F. Lane, MZSP). PARAGUAY: ♀ (J. Viana, MZCN). ARGENTINA: *Prov. Misiones.* Santa María, Dec. 1947, 3♀ (J. Viana, MACN); Santa Ana, Nov.–Dec. 1958, ♀, ♂ (J. Viana, MACN); Monteagudo, Nov. 1956, ♀ (J. Viana, MACN).

*Micrathena ucayali* new species  
Figures 490–497; Map 7

*Type.* Female holotype and four female paratypes from Río Ucayali between Atalaya and Pucallpa, Dept. Ucayali, Peru, 15 July to 4 August 1939 (W. F. Walker, Jr., MCZ). The specific name is a noun in apposition, named after the locality.

*Description.* Female. Carapace orange with median dusky line and sides of thorax dusky. Sternum orange underlain by white, with a black line along each side. Legs orange, dusky on anterior. Dorsum of abdomen with black spines, having white pigment on outside of anterior spines; sides grayish; venter black except for a pair of white marks behind genital groove; black all around spinnerets; some white on sides. Carapace arched, with a shallow indistinct thoracic depression. Posterior median eyes 1.5 diameters of others, which are subequal in size. Abdomen subtriangular with pair of spines overhanging carapace, a pair of large posterolateral spines, a pair of large posterior spines, and a small tooth on each side halfway between anterior and posterolateral spines (Figs. 490, 491). Total length, 6.0 mm. Carapace, 2.4 mm long, 1.9 mm wide. First femur, 2.2 mm; patella and tibia, 2.3 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 2.0 mm; third, 1.5 mm. Fourth femur, 2.7 mm; patella and tibia, 2.2 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

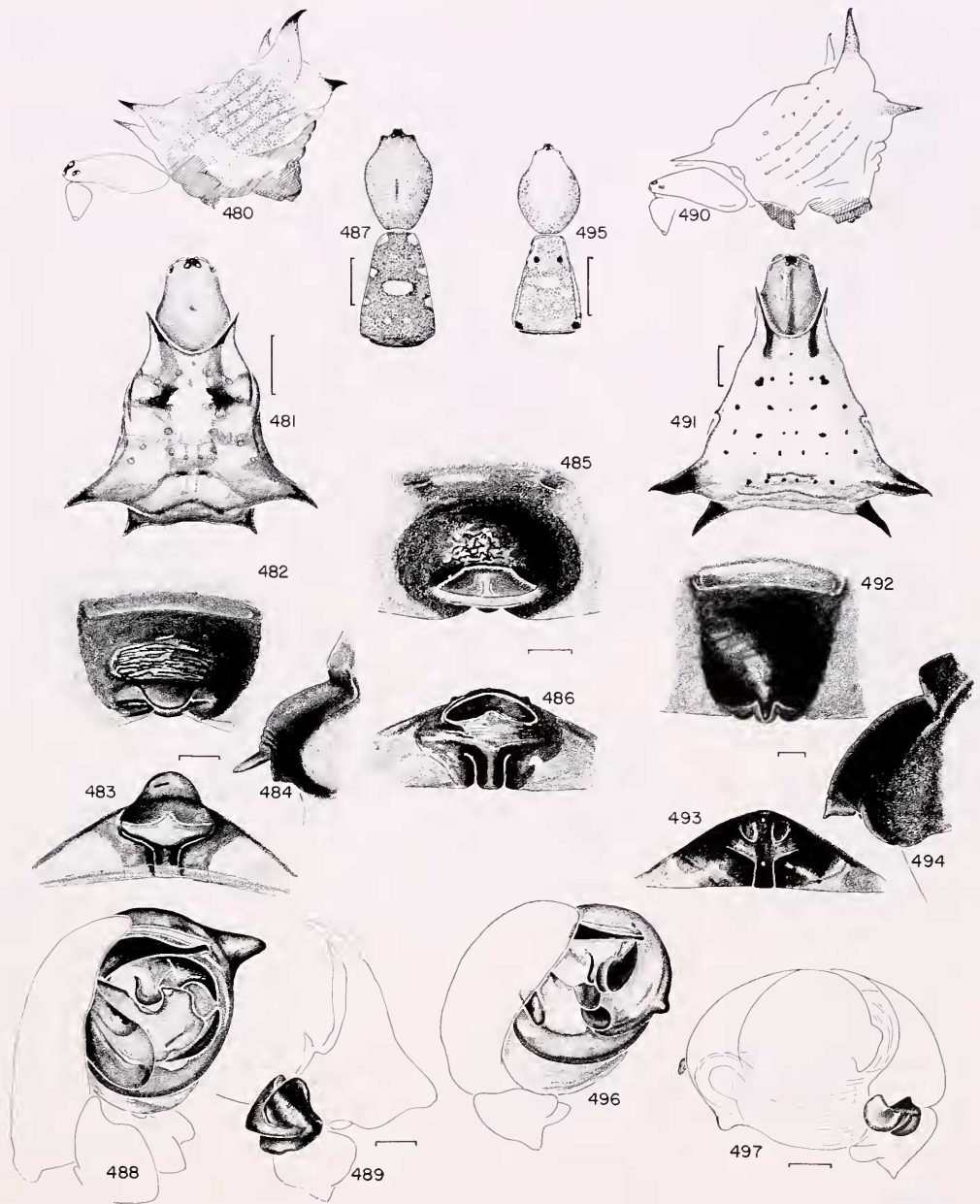
Male. Carapace dark orange with thorax darker on sides and posterior. Sternum orange with white pigment spots. Legs orange. Dorsum of abdomen gray with a median white patch and four black patches, and some indistinct lighter areas. Venter orange-gray. Posterior median eyes twice diameter of anterior medians. No coxal hook. Abdomen trapezoidal (Fig. 495). Total length, 4.0 mm. Carapace, 1.9 mm long, 1.2 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm; tarsus, 0.5 mm. Second patella and tibia, 1.0 mm; third, 0.7 mm. Fourth femur, 1.5 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 5.5 mm to 6.2 mm.

*Note.* Male and female were collected together on the upper Amazon.

*Diagnosis.* *Micrathena ucayali* differs from the similar *M. schenkeli* by having an additional pair of spines (Figs. 490,





Figures 480–489. *Micrathena schenkeli* Mello-Leitão. 480–486. Female. 480. Lateral. 481. Dorsal. 482, 485. Epigynum, ventral. 483, 486. Epigynum, posterior. 484. Epigynum, lateral. 485, 486. Lobe torn off. 487–489. Male. 487. Dorsal. 488. Left palpus, mesal. 489. Paracymbium, cymbium, lateral.

Figures 490–497. *Micrathena ucayali* n. sp. 490–494. Female. 490. Lateral. 491. Dorsal. 492. Epigynum, ventral. 493. Epigynum, posterior. 494. Epigynum, lateral. 495–497. Male. 495. Dorsal. 496. Palpus, mesal. 497. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 480, 481, 487, 490, 491, 495, 1.0 mm.

491), and by having a sharp tip on the epigynum at the most ventral point of the bulge (Fig. 492). Also, there is no notch above the tip in profile (Fig. 494), and in posterior view there is a depression on each side of the tip (Fig. 493). The male differs from others of the species group by having the sclerites of the median apophysis and conductor much closer to each other (Fig. 496) and by the shape of the paracymbium (Fig. 497).

*Paratypes.* PERU: *Dept. Loreto.* Pucallpa, 2 Oct. 1954, ♀ (E. I. Schlinger, E. S. Ross, CAS); Iquitos, Nov. 1961, juv. (J. Callan, AMNH); opposite Leticia, Colombia, 23 Feb. 1972, ♀ (CNC). *Ucayali.* Colonia Callarúa, Río Callarúa, 15 km from Ucayali, Oct. 1961, ♀ (B. Malkin, AMNH). BRAZIL: *Est. Amazonas.* São Paulo [São Paulo de Olivença], 3♀ (2494, MNHN); Benjamin Constant, 23 Dec. 1975, ♀ (A. Carvalho, FZRS); Alto Solimões, Dec. 1979, ♀, ♂ (A. Lise, FZRS).

*Micrathena acuta* (Walckenaer)  
Figures 498–507; Map 7

*Plectana acuta* Walckenaer, 1841: 172. Female from Cayenne, French Guiana, lost.

*Acrosoma acutum*.—Keyserling, 1863: 71, pl. 2, fig. 4, ♀; 1892: 28, pl. 1, fig. 25, ♀.

*Micrathena acuta*.—Roewer, 1942: 953. Bonnet, 1957: 2860.

*Fronous nigripes*.—di Caporiacco, 1947: 25. Male paralectotype (not female lectotype, here designated) from Port Diamond [Great Diamond], British Guyana (MZUF), examined; 1948: 663, figs. 71, 72, ♂. NEW SYNONYMY.

*Micrathena alpha* di Caporiacco, 1947: 26. Immature holotype from Two Mouths, Essequibo, Guyana (MZUF), examined. NEW SYNONYMY.

*Ildebaha inermis* Schenkel, 1953: 28, fig. 25, ♂. Male holotype from El Pozón, Dpto. Acosta, Est. Falcón, Venezuela (NMB), examined. NEW SYNONYMY.

*Synonymy.* Walckenaer described the diagnostic six spines. Keyserling added that the sternum is highly arched.

Schenkel named the male *inermis*, and Caporiacco the immature *Micrathena alpha*.

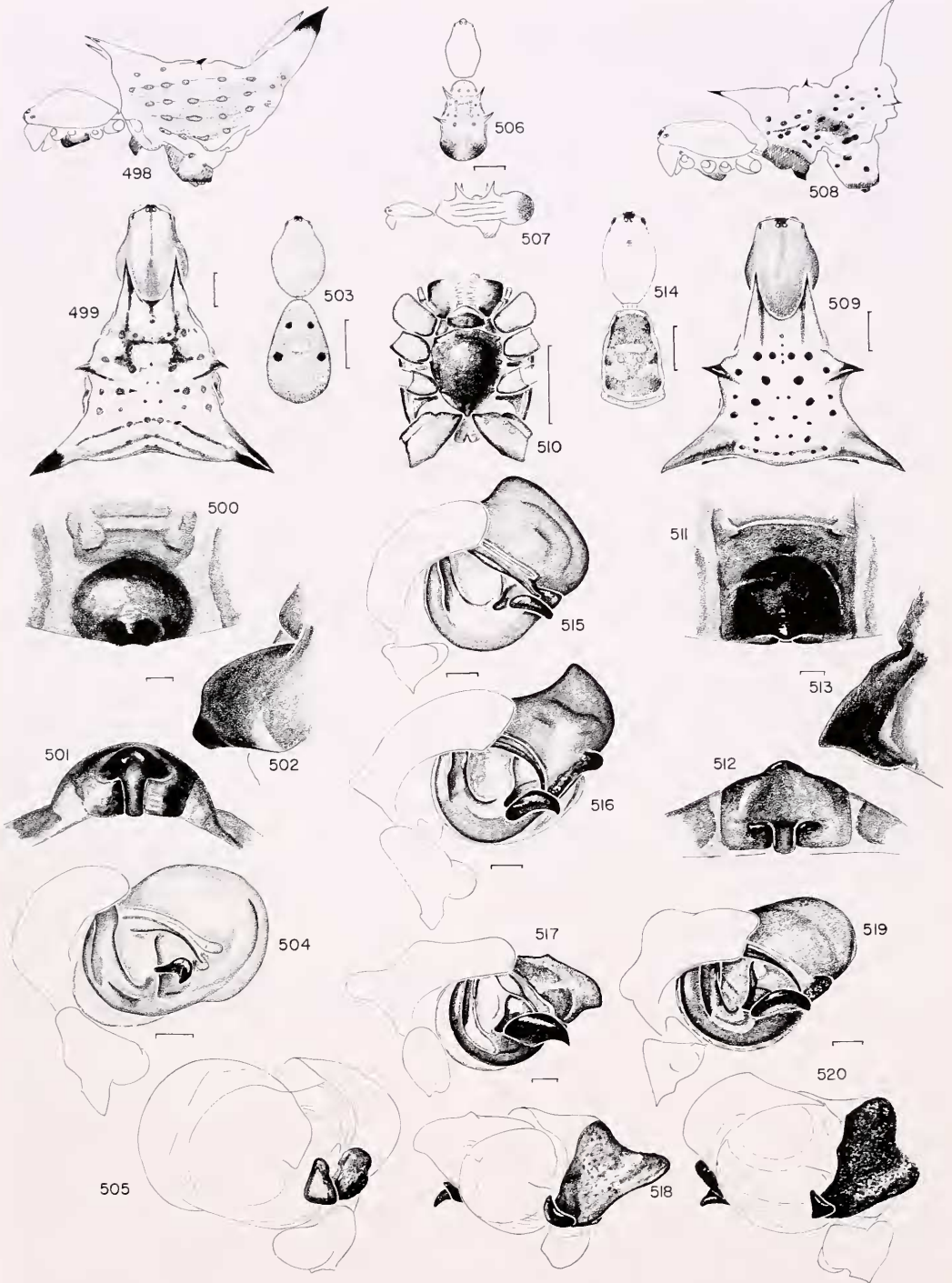
*Description.* Female from Venezuela. Carapace orange-yellow, with darker sides and median line. Sternum brownish black. Coxae light orange, distal leg articles dusky orange. Dorsum of abdomen white with a black patch on lateral spines; insides of anterior spines and tips of posterior spines black (Figs. 498, 499); sides with a black patch; venter black; areas in midline without pigment; some white pigment patches on sides. Carapace arched, with indistinct, shallow thoracic depression. Sternum strongly arched (Fig. 510). Total length, 7.3 mm. Carapace, 2.7 mm long, 2.2 mm wide. First femur, 2.6 mm; patella and tibia, 2.7 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm. Second patella and tibia, 2.6 mm; third, 1.7 mm. Fourth femur, 3.3 mm; patella and tibia, 3.1 mm; metatarsus, 2.2 mm; tarsus, 0.8 mm.

Male from Colombia. Carapace, sternum, legs orange-brown. Dorsum of abdomen with four black spots and a median white patch (Fig. 503); venter black on dark orange, with some white pigment behind genital groove. Carapace oval, with indistinct thoracic depression. Eye proportions as in female. Sternum only slightly arched. First coxa without hook. First patella-tibia with some macrosetae ventrally; second patella-tibia thicker than first. Abdomen egg-shaped (Fig. 503). Total length, 4.0 mm. Carapace, 1.0 mm long, 1.1 mm wide. First femur, 1.3 mm; patella and tibia, 1.3 mm; metatarsus, 0.9

Figures 498–507. *Micrathena acuta* (Walckenaer). 498–502. Female. 498. Lateral. 499. Dorsal. 500. Epigynum, ventral. 501. Epigynum, posterior. 502. Epigynum, lateral. 503–505. Male. 503. Dorsal. 504. Left palpus, mesal. 505. Palpus, lateral. 506. 507. Immature (? male). 506. Dorsal. 507. Lateral.

Figures 508–520. *Micrathena flaveola* (C. L. Koch). 508–513. Female. 508. Lateral. 509. Dorsal. 510. Sternum, endites and coxae. 511. Epigynum, ventral. 512. Epigynum, posterior. 513. Epigynum, lateral. 514–520. Male. 514. Dorsal. 515–517, 519. Palpus, mesal. 518, 520. Palpus, lateral. 515. (Prov. Misiones, Argentina). 516. (Manaus, Brazil). 517, 518. (Tingo María, Peru). 519, 520. (Costa Rica).

Scale lines. 0.1 mm, except Figures 498, 499, 503, 506–510, 514, 1.0 mm.



mm; tarsus, 0.5 mm. Second patella and tibia, 1.4 mm; third, 0.6 mm. Fourth femur, 1.4 mm; patella and tibia, 1.4 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 5.3 to 7.3 mm, males from 3.9 to 4.0 mm. Females may be much darker in color, with a pattern resembling that of *M. triangularispinosa*. Some females have a tubercle posteriorly on the abdomen below the posterolateral spines. The bulbous portion of the male palpal bulb varies slightly in outline.

*Note.* Male and female were collected together in Colombia and northern Brazil.

*Diagnosis.* Like *M. flaveola*, females have a swollen sternum (Fig. 510). Females differ from *M. flaveola* by having only six spines, lacking the fourth pair of spines on the posterior of the abdomen (Figs. 498, 499). In ventral view there is a faint transverse groove on the swelling of the epigynum (Fig. 502); in posterior view the parallel, paraxial slits appear much longer (Fig. 501) than in *M. flaveola*.

Males, like those of *M. flaveola*, have the bulb distally swollen (Figs. 504, 505), but differ by having the sculptured area of the cymbium facing the paracymbium small (Fig. 505).

*Distribution.* Trinidad, Lesser Antilles, Peru, Brazil (Map 7).

*Records.* LESSER ANTILLES: *Trinidad*. ♀ (MCZ). VENEZUELA: *Est. Carabobo*. San Esteban, Jan. 1940, 2♀ (P. Andruze, CUC), Aug. 1975, ♀ (Martinez, MACN). *Distr. Fed. Caracas*, ♀ (NMW). *Monagas*. Caripito, March, April 1942, 3♀ (W. Beebe, AMNH). GUYANA: Canister Fall, 3 July 1923, ♀ (G. E. Bodlin, BMNH). FRENCH GUIANA: St. Laurent de Maroni, ♂ (K. Jelski, PAN). COLOMBIA: *Dept. Meta*. 15 km SW Puerto Lopez, 1978, 3♀, ♂ (W. Eberhard, MCZ); Villavicencio, 19 July 1938, ♀ (H. Dybas, AMNH), 2♀ (Fasel, NMW). *Putumayo*. Buena Vista, 23–29 July 1972, ♀ (W. Eberhard, MCZ). ECUADOR: *Prov. Napo*. R. F. Cuyabeno, 6 March 1983, 15 Feb. 1984,

7 ♀ (L. Avilés, MECN). PERU: *Dept. San Martín*. 20 km NE of Moyobomba, 1,600 m, Aug. 1947, ♀ (F. Woytkowski, EPC). BRAZIL: *Terr. Amapá*. Serra de Navio, June 1966, ♀, ♂ (M. E. Galiano, MEG). *Est. Pará*. Belém, Aug. 1971, 2♀ (M. E. Galiano, MEG); Rio Gurupi, 1963, ♀ (B. Malkin, MZSP). *Amazonas*. Rio Negro, Umarituba, 20 April 1924, ♀ (A. Roman, NRS). *Rondônia*. Vila Murinho, 3 March 1922, ♀ (J. H. Williamson, MCZ). *Bahia*. Uruçuca, 26 Nov. 1977, ♀ (J. S. Santos, FZRS). *Goiás*. Jataí, Oct. 1962, ♀ (Exp. Dept. Zool, MZSP). *Mato Grosso*. Barra de Tapirapé, July–Aug. 1962, Jan. 1963, 2♀ (B. Malkin, AMNH). *Rio de Janeiro*. Teresópolis, ♀ (E. Reimoser, MCZ). ARGENTINA: *Prov. Misiones*. Punto Aguirre, 1943, ♀ (J. Viana, MACN).

### *Micrathena flaveola* (C. L. Koch)

Figures 8, 508–520; Map 7

*Acrosoma aculeatum*.—C. L. Koch, 1836: 58, fig. 211, ♀. Misidentification, not *M. aculeata* Fabricius.

*Acrosoma flaveola* C. L. Koch, 1839: 126, fig. 522, ♀. Female from Brazil (ZSM), destroyed.

*Plectana gladiola* Walckenaer, 1841: 182. New name for *A. aculeatum* C. L. Koch. NEW SYNONYMY.

*Acrosoma vittosum* O. P.-Cambridge, 1890: 63, pl. 8, fig. 14, ♂. Two male syntypes from Bugaba, Panama (BMNH), examined. Keyserling, 1892: 10, pl. 1, fig. 7, ♂. NEW SYNONYMY.

*Acrosoma fericula* O. P.-Cambridge, 1890: 64, pl. 8, fig. 13. Juvenile female lectotype here designated from Bugaba, Panama (BMNH), examined. NEW SYNONYMY.

*Acrosoma flaveolum*.—Keyserling, 1892: 8, pl. 1, fig. 5, ♀.

*Ildibaha albomaculata* Keyserling, 1892: pl. 2, fig. 29. Immature holotype from Blumenau [Est. Santa Catarina, Brazil] (BMNH), lost. NEW SYNONYMY.

*Micrathena vittosa*.—F. P.-Cambridge, 1904: 532, pl. 50, fig. 11, ♂. Roewer, 1942: 966. Bonnet, 1957: 2881. Chickering, 1961: 466, figs. 206–210, ♂.

*Micrathena gladiola*.—F. P.-Cambridge, 1904: 537. Reimoser, 1917: 145. Roewer, 1942: 958. Bonnet, 1957: 2868. Chickering, 1961: 419, figs. 67–71, ♀.

*Micrathena fericula*.—F. P.-Cambridge, 1904: 539.

*Ildibaha fericula*.—Mello-Leitão, 1932: 94. Roewer, 1942: 952. Bonnet, 1957: 2296.

*Synonymy.* C. L. Koch described the arched carapace, the arched, “egg-shaped”

sternum, and the eight spines for *M. flavicola*. *Acrosoma aculeatum* of C. L. Koch, a misidentification renamed *Plectana gladiola* by Walckenaer, appears to be the same. *Acrosoma vitiosum* is the male. *Acrosoma fericula* is an immature, apparently collected with *A. vitiosum*. *Ildibaha albomaculata* is an immature of this or of a related species in this group.

The illustrations were made from a male and female from Costa Rica.

**Description.** Female from Costa Rica. Carapace orange-brown, darker on sides. Sternum dark brown. Legs dark orange. Dorsum of abdomen white with a black line on inside of anterior spines; lateral spines black; large posterior spines orange; sides with black patches; venter light orange with brown sclerotized spots. Carapace high, without mark except for indistinct thoracic dent. Sternum convex, bulging (Fig. 510). Abdomen with four pairs of spines (Figs. 508, 509). Total length, 6.5 mm. Carapace, 2.8 mm long, 2.0 mm wide. First femur, 2.4 mm; patella and tibia, 2.4 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 2.3 mm; third, 1.6 mm. Fourth femur, 3.2 mm; patella and tibia, 2.6 mm; metatarsus, 1.9 mm; tarsus, 0.9 mm.

Male from Costa Rica. Carapace, sternum dark brown. Legs grayish brown. Dorsum of abdomen with anterior transverse white line and median white patch on brown; six black patches. Venter with brown sclerotized areas, soft areas black. First coxa without hook. First and second femora with some short macrosetae ventrally and proximally. Abdomen trapezoidal, narrow anteriorly, rounded behind, slightly lobed on sides (Fig. 514). Total length, 4.4 mm. Carapace, 2.0 mm long, 1.2 mm wide. First femur, 1.5 mm; patella and tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.6 mm. Second patella and tibia, 1.3 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.5 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm.

**Variation.** Females vary in total length from 6.3 to 7.2 mm, males from 4.0 to 4.8

mm. A thoracic dent may sometimes be visible. There may be some sculpturing posteriorly on the epigynum. The swollen tegulum of the male palpus varies in outline among individuals (Figs. 515–519).

**Note.** Living specimens are yellow, with large spines purplish. Males and females were associated because they belong to the same species group, lacking a thoracic indentation. Males and females have been collected from Costa Rica to Argentina. Penultimate immatures have the sternum black and only slightly convex; the epigynal area is sclerotized and spherical.

**Diagnosis.** Females of this species differ from all others, except *M. acuta*, by having a swollen sternum (Fig. 510). They differ from *acuta* by having eight spines rather than six, a small fourth pair behind the large posterolaterals (Figs. 508, 509). In addition, the shape of the epigynum differs: there is a faint arch-shaped impression on the swelling (Fig. 513), and in posterior view the paraxial parallel slits are quite short, ending some distance from the tip (Fig. 512). The male differs from *M. acuta* by having a large sculptured area on the cymbium facing the paracymbium (Figs. 518, 520).

**Distribution.** Costa Rica to northern Argentina (Map 7).

**Records.** COSTA RICA: *Prov. Limón.* Hamburg Farm, ♀ (MCZ); Lalola, ♀ (MCZ). *Cartago.* Turrialba, 2♀ (AMNH). *Heredia.* La Selva, Puerto Viejo, ♂ (MCZ). PANAMA: *Prov. Panamá.* Madden Dam, ♀ (AMNH). VENEZUELA: *Est. Monagas.* Caripito, ♀ (AMNH). *Carabobo.* Bahia Patanemo, 2♀ (MACN). *Dist. Fed. Caracas,* ♀ (NMW). GUYANA: *Bartica Distr.* Kartabo, 2♀, ♂ (AMNH); Kaietur, ♀ (AMNH). FRENCH GUIANA: Cayenne, 3♀ (PAN); St. Laurent de Maroni, ♀ (AMNH). COLOMBIA: *Dept. Meta.* Villavicencio, 2♀ (AMNH, NMW); Caño Grande, ♀ (AMNH). *Santander.* Río Suárez, 800–1,000 m, 2♀ (AMNH). *Coquétá.* Río Ortegua, ♀ (AMNH). ECUADOR: *Prov. Napo.* Tarapuy, 2♀ (MECN). PERU: *Dept. Loreto.* Loreto, 3♀ (MCZ); Río

Bambo, Alto Tapiche, ♀ (MZSP). *San Martín*. Saposoa, Río Huallaga, 2♀ (EPC). *Huánuco*. Tingo María, 4♀ (AMNH); Monsón Valley, Tingo María, ♀, ♂ (CAS); 67 km E Tingo María, ♀ (CAS). *Ucayali*. Mishana, ♀ (MPM). *Huancavelica*. Valle Chanchamayo, 2♀ (EPC). BRAZIL: *Est. Amazonas*. Tefé, ♀ (MCZ); Manaus, ♂ (MEG); Rio Autas, Capiranga, ♀ (NRS); Taracuá, 2♀ (NRS). *Pará*. Belém, ♀ (AMNH); Canindé, Rio Gurupi, ♀ (AMNH). *Bahia*. Camacari, ♀ (FZRS); Salvador, ♀ (ZMK). *Espírito Santo*. Colatina, 3♀ (MNRJ); Rio São José, ♀ (MZSP). *Rio de Janeiro*. Rio de Janeiro, ♀ (ZMK). Teresópolis, ♀ (E. Reimoser, MCZ). *São Paulo*. Bertioga, ♀ (MZSP). *Santa Catarina*. Corupá, ♀ (AMNH); 3♀ (MZSP). BOLIVIA: *Prov. Beni*. Chacobo Village, Río Benicito, ♀ (AMNH). *Cochabamba*. Gral. Roman, 2♀ (MULP); Río Chipiri, ♀ (ZSM). ARGENTINA: *Prov. Misiones*. Eldorado, 5♀, 2♂ (AMNH, MULP); Montecarlo, 4♀ (AMNH); Parque Nac. Iguazú, ♂ (MEG); Punto Rieo, ♀ (MACN); Punto 17 de Octubre, ♀, ♂ (MACN); Puerto Aguipe, ♀ (MULP); San Ignacio, ♀ (MULP).

*Micrathena ornata* Mello-Leitão  
Figures 521–524; Map 7

*Micrathena ornata* Mello-Leitão, 1932: 86, fig. 4, ♀. Female holotype from Niterói, Brazil (MNRJ), examined.

*Type*. The abdomen of the type is shrivelled and transversely shrunken. It seems to have been dried at one time. It does not look much like figure 4 of Mello-Leitão, but the description fits this species.

It was examined some time before this study was started.

*Description*. Female. Carapace, sternum, legs orange-brown. Dorsum of abdomen white with sclerotized areas orange-brown. Sides with white pigment streaks between grooves. Venter with white transverse bars posterior to spinnerets. Carapace completely smooth, high, rounded posteriorly, with a small indistinct circular thoracic depression (Fig. 522). Total length, 6.0 mm. Carapace, 2.0 mm long, 1.8 mm wide. First patella and tibia, 2.2 mm; second, 1.8 mm; third, 1.2 mm. Fourth femur, 2.3 mm.

*Diagnosis*. This species differs from others of the *M. triangularispinosa* group by having twelve abdominal spines (Figs. 521, 522) and by the structure of the epigynum (Figs. 523, 524).

*Note*. No other specimens have been found.

The *lepidoptera* Group

Females from this group are distinguished by having compound spines on the sides of the abdomen (Figs. 526, 535) and by having a small, light colored median scape behind the top of the bulge of the epigynum (Figs. 527, 536). The carapace, unlike that of the *M. triangularispinosa* group, has a thoracic depression and dimples. The male lacks a coxal hook and has a two-part median apophysis and a large paracymbium which projects laterally (Figs. 531–533, 540–542).

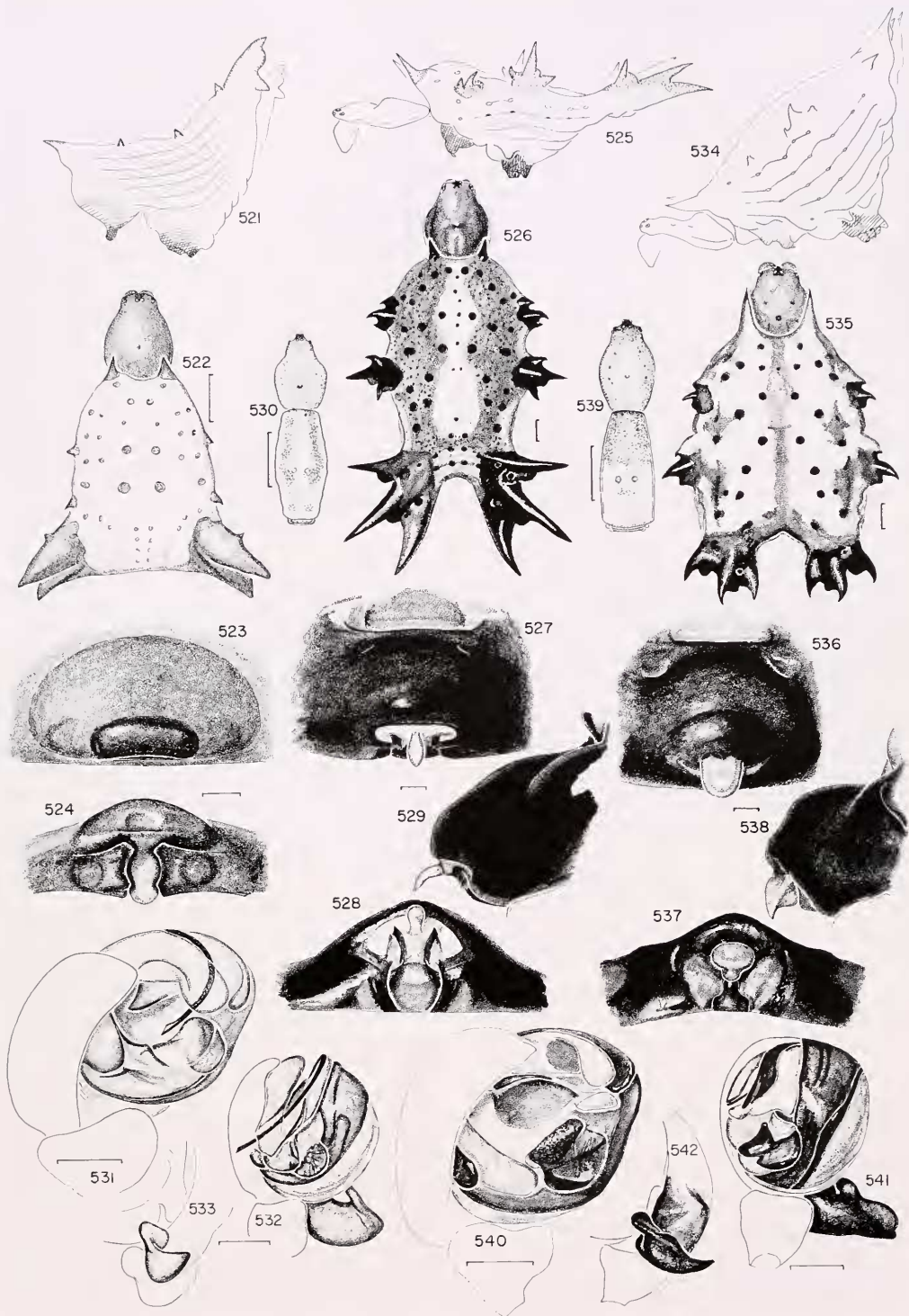
The carapace of the female has a high thorax, and a narrow rim and a distinct thoracic depression (Figs. 525, 526, 534,

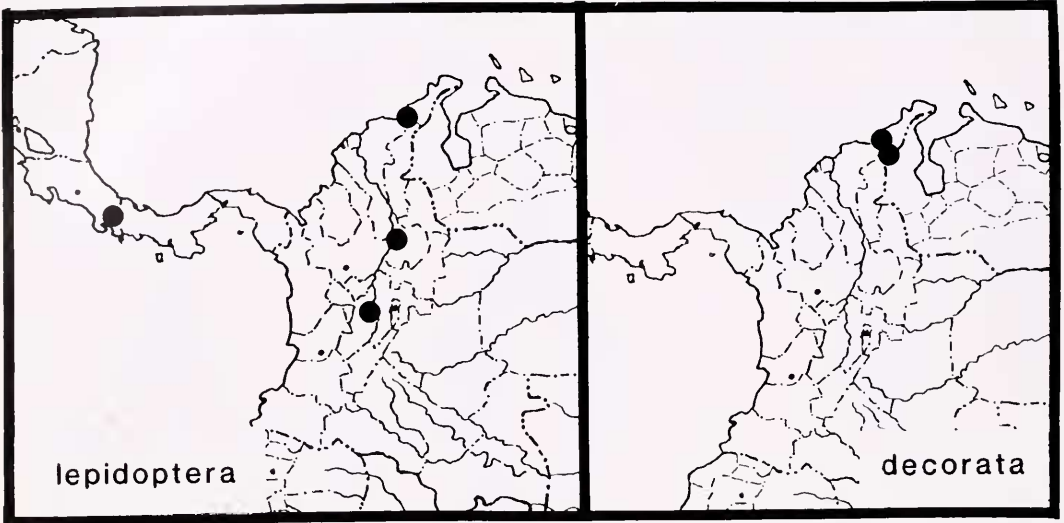
Figures 521–524. *Micrathena ornata* Mello-Leitão, female. 521. Abdomen, lateral. 522. Dorsal. 523. Epigynum, ventral. 524. Epigynum, posterior.

Figures 525–533. *Micrathena lepidoptera* Mello-Leitão. 525–529. Female. 525. Lateral. 526. Dorsal. 527. Epigynum, ventral. 528. Epigynum, posterior. 529. Epigynum, lateral. 530–533. Male. 530. Dorsal. 531. Left palpus, mesal. 532. Palpus, ventral. 533. Paracymbium, lateral.

Figures 534–542. *Micrathena decorata* Chickering. 534–538. Female. 534. Lateral. 535. Dorsal. 536. Epigynum, ventral. 537. Epigynum, posterior. 538. Epigynum, lateral. 539–542. Male. 539. Dorsal. 540. Palpus, mesal. 541. Palpus, ventral. 542. Paracymbium, lateral.

Scale lines. 0.1 mm, except Figures 521, 522, 525, 526, 530, 534, 535, 539, 1.0 mm.





Map 8. Distribution of *Micrathena* species of the *lepidoptera* group.

535). The abdomen not only has six compound spines, spines overhanging the carapace, but also a blunt spine on the venter, on each side of the spinnerets (Figs. 525, 534). The carapace of the male is relatively flat with thoracic mark, the abdomen rectangular, longer than wide, slightly convex on the sides, with two pairs of minute tubercles on posterior folds (Figs. 530, 539). The genitalia of the two species are much like those of the *triangularispinosa* group.

The females of the two species are easiest to separate by the epigynum and dorsal color markings, the males by the length of the embolus and shape of the paracymbium.

The species are found from Costa Rica to Colombia (Map 8).

KEY TO THE *LEPIDOPTERA* GROUP

1. Female with epigynal scape as wide as long and almost as thick (Figs. 536, 538); abdomen with a dark median longitudinal band (Fig. 535); male with pointed paracymbium (Fig. 542) and short embolus (Fig. 540); northern Colombia, Map 8 ..... *decorata*
- Epigynal scape more than twice as long as wide (Figs. 527, 529); abdomen with a light median longitudinal band (Fig. 526); male with blunt paracymbium (Fig. 533) and

long embolus (Fig. 531); Costa Rica to Colombia, Map 8 ..... *lepidoptera*

*Micrathena lepidoptera* Mello-Leitão  
Plate 2; Figures 525–533; Map 8

*Micrathena lepidoptera* Mello-Leitão, 1941: 266, fig. 3, ♀. Female holotype from La Petrolera, Catatumbo [4°02'N, 75°07'W, Dept. Tolima, Colombia] (MNRJ), lost.

*Type.* Mello-Leitão's illustration of the female abdomen confirms the name of this species.

*Description.* Female from Costa Rica. Carapace dark brown with light rim. Sternum dark brown. Coxae and distal leg articles slightly lighter grayish brown. Dorsum of abdomen with blackish spines, sides of dorsum black, middle yellow-orange; venter black with an orange patch on each side of epigastric area and one on each side of spinnerets, which enclose a blunt ventral spine. Carapace with high thorax and distinct median thoracic depression, three grooves, no dimples. Abdomen with three pairs of trifid spines (Fig. 526) and a pair of blunt spines on the venter on either side of spinnerets (Fig. 525). Total length, 13.2 mm. Carapace, 4.0 mm long, 3.2 mm wide. First femur, 4.2 mm; pa-



tella and tibia, 4.2 mm; metatarsus, 2.6 mm; tarsus, 1.1 mm. Second patella and tibia, 3.6 mm; third, 2.3 mm. Fourth femur, 4.6 mm; patella and tibia, 3.7 mm; metatarsus, 2.9 mm; tarsus, 1.1 mm.

Male. Carapace dark brown. Sternum black. Coxae and distal leg articles yellow-white. Dorsum of abdomen yellow-white with black marks (Fig. 530); venter black. Carapace with distinct thoracic depression, without dimples. First coxa without hook. Fourth legs slightly shorter than first. Sides of abdomen almost parallel (Fig. 530). Total length, 3.3 mm. Carapace, 1.3 mm long, 0.9 mm wide. First femur, 1.6 mm; patella and tibia, 1.4 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm. Second patella and tibia, 1.1 mm; third, 0.6 mm. Fourth femur, 1.3 mm; patella and tibia, 1.0 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 12.6 to 13.2 mm.

*Note.* The male was not collected with the female. It is similar to the presumed male of *M. decorata*. Also, the collector, John Kochalka, had marked it as belonging to the females he collected from nearby.

*Diagnosis.* The narrow scape of the epigynum (Fig. 527) and the median light dorsal area of the abdomen (Fig. 526) separate this species from *M. decorata*. Differences in shape of the paracymbium (Fig. 533), median apophysis and the threadlike embolus (Fig. 531) separate the male from that of *M. decorata*.

*Distribution.* Costa Rica to Colombia (Map 8).

*Records.* COSTA RICA: *Prov. Puntarenas.* San Vito, Las Cruces, 6 March 1979, 20 Aug. 1979, 2♀ (J. Coddington, MCZ). COLOMBIA: *Dept. Santander.* Río Opón, 1,000 m, Jan. 1947, ♀ (L. Richter, AMNH). *Boyacá.* Río Dpan [?], Nov.–Dec. 1945, 2♀ (AMNH). *Magdalena.* San Pedro, Sierra Nevada de Santa Marta, 1,000 m, 8 Feb. 1974, ♀ (J. Kochalka, JAK); above Minca Valley, Sierra Nevada de Santa Marta, 880 m, 24 Feb. 1974, ♂ (J. Kochalka, JAK).

### *Micrathena decorata* Chickering Figures 534–542; Map 8

*Micrathena decorata* Chickering, 1960c: 73, figs. 29–32, ♀. Female holotype from New Granada [Spanish colony of Colombia and Panama] (BMNH), examined.

*Description.* Female. Carapace blackish brown. Sternum, legs black. Dorsum of abdomen with black spines and median dark longitudinal line on yellow-white (Fig. 535); sides, venter with white patches. Carapace with two pairs of dimples and median thoracic depression; rim narrow in dorsal view, thorax high. Abdomen with a simple pair of spines overhanging carapace, two pairs of trifid spines on sides, a pair of posterolateral trifid spines (Fig. 535), and a blunt spine on each side of spinnerets (Fig. 534). Total length, 11.2 mm. Carapace, 3.8 mm long, 3.2 mm wide. First femur, 3.9 mm; patella and tibia 3.9 mm; metatarsus, 2.4 mm; tarsus, 1.0 mm. Second patella and tibia, 3.5 mm; third, 2.2 mm. Fourth femur, 4.4 mm; patella and tibia, 3.7 mm; metatarsus, 2.7 mm; tarsus, 1.0 mm.

Male. Carapace black with some brown in middle of thorax. Sternum black. Coxae yellowish white, other leg articles brownish black, distal articles darkest. Dorsum of abdomen with anterior half black, a median dusky mark, and posterior blackish on yellow-white; venter gray. Carapace with three pairs of dimples and a distinct thoracic depression. First coxae without hook. The femur of the first leg is longer than fourth. Sides of abdomen almost parallel (Fig. 539). Total length, 3.7 mm. Carapace, 1.7 mm long, 1.0 mm wide. First femur, 1.7 mm; patella and tibia, 1.6 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm. Second patella and tibia, 1.3 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 8.2 to 11.2 mm.

*Note.* The male was collected with females of *M. decorata*, *M. lucasi* and *M.*

*sexspinosa* at Finca San José, 8 km SE of Socorpa Mission, Colombia.

**Diagnosis.** The wide scape of the epigynum (Fig. 536) separates females of this species from *M. lepidoptera*. Males are distinguished by the pointed paracymbium (Fig. 542) and the short embolus (Figs. 540, 541).

**Distribution.** Northeastern Colombia (Map 8).

**Records.** COLOMBIA: *Dept. Magdalena.* Sierra Nevada de Santa Marta, Cerro Lagila, 1,400 m, 30 April 1975, 3♀ (J. Kochalka, JAK). *Cesar.* Socorpa Mission, 1,350 m, 2 Aug. 1968, ♀, 1,500–1,600 m, 16–17 Aug. 1968, ♀ (B. Malkin, AMNH); 8 km SE Socorpa Mission, 1,450–1,500 m, near San José village, 27–31 July 1968, 2♀, ♂ (B. Malkin, AMNH).

### The *schreibersi* Group

Females are characterized by having a pair of keels at the posterior margin of the epigynum (Figs. 554, 559, 568, 576; absent in *M. spitzzi*, Fig. 546). Males are distinguished by having their abdomen constricted in the middle, violin-shaped (Figs. 548, 561, 570, 579), seemingly lacking a terminal apophysis in the palpus and having a complex median apophysis comprised of several parts (Figs. 549, 562, 571, 580).

The carapace of the female has a wide rim, a thoracic depression (Figs. 552, 565, 574), and a pair of dimples. The thorax is relatively low, widest anteriorly. The rim and dimples are absent in *M. spitzzi*. The abdomen is armed with ten spines, the fourth pair the longest (Figs. 565, 574), except *M. embira* which has 14 spines (Fig. 552). Except for *M. spitzzi* (Fig. 544), a pair of short spines overhangs the carapace. The epigynum has a median squarish overhanging piece at the tip of the bulge, wider than long, and attached anteriorly (Figs. 553, 567, 575). Males have a shiny carapace with an indistinct thoracic depression; *M. schreibersi* and *M. balzapamba* have a pair of dimples. Males

lack a coxal hook and the groove on the second femur.

It is uncertain whether *M. embira* belongs to the group, since the male is unknown; *M. spitzzi* probably does.

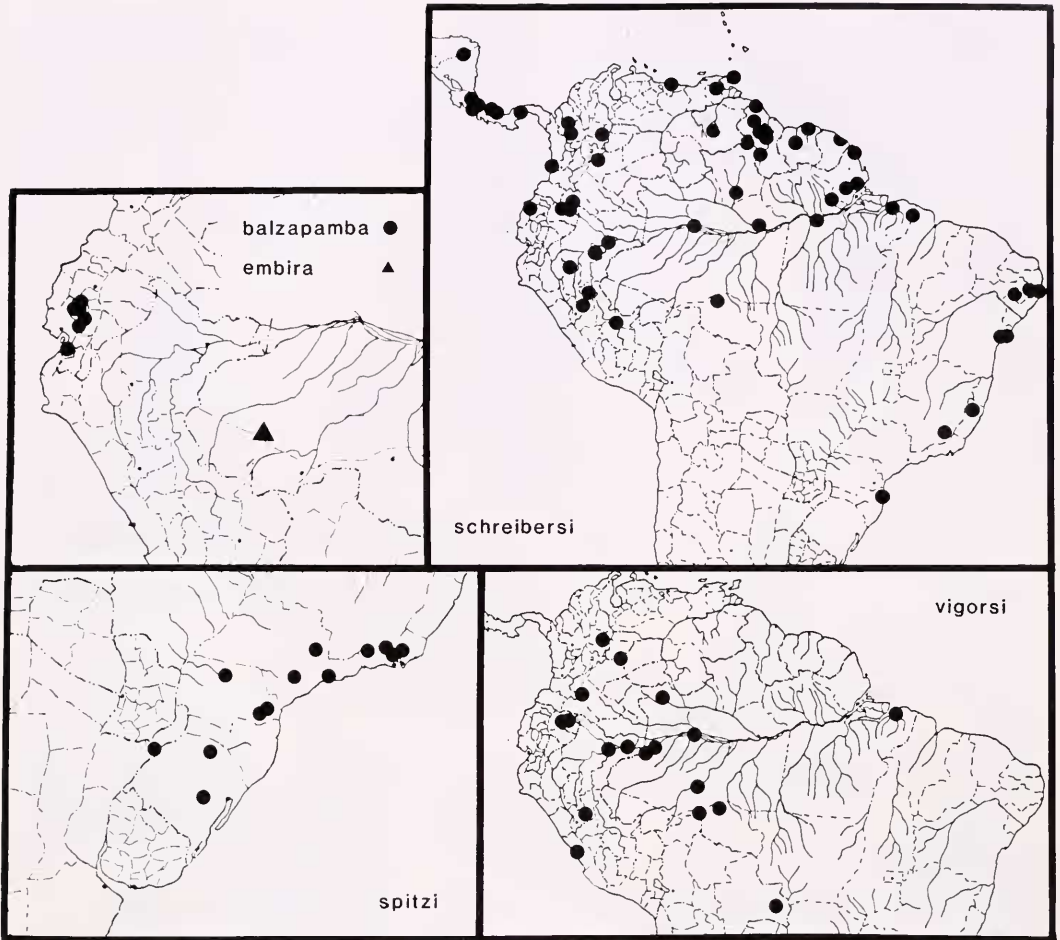
Diagnostic features for species are the position of the spines on the abdomen of females and the epigynum; for males, the structure of the palpus.

### KEY TO SPECIES OF THE *SCHREIBERSI* GROUP

1. Females abdomen with 14 spines, the fifth pair large and bent forward (Figs. 551, 552); epigynum with a median lobe on anterior of bulge (Figs. 553–555); male unknown; upper Amazon, Map 9 ..... *embira*
- Female abdomen with 10 spines or humps (Figs. 544, 566); epigynum otherwise ..... 2
- 2(1) Female abdomen with pointed humps and no spines anterior (Figs. 543, 544); male with abdomen constricted near posterior end (Fig. 548) and palpal median apophysis as in Figure 549; southeastern Brazil, Map 9 ..... *spitzzi*
- Female abdomen with large spines, short spines anteriorly overhanging carapace (Figs. 557, 565, 574); male with abdomen constricted closer to anterior end (Figs. 561, 570, 579) ..... 3
- 3(2) Epigynum with anterior, dark, sclerotized lobe (Figs. 567, 575); male palpus with base of median apophysis bearing a sclerite (Figs. 571, 580) ..... 4
- Epigynum with an anterior transverse ridge (Figs. 558–560); male palpus without folded sclerite on base of median apophysis (Fig. 562); Western Ecuador, Map 9 ..... *balzapamba*
- 4(3) Females with area between second and third spine pair longer than wide (Fig. 574); males with a prong on median apophysis of palpus (Fig. 580); Amazon area, Map 9 ..... *vigorsi*
- Female with area between second and third spine pair wider than long (Fig. 565); males with median apophysis with rim pointing toward cymbium of embolus (Fig. 571); Nicaragua to southeastern Brazil, Map 9 ..... *schreibersi*

### *Micrathena spitzzi* Mello-Leitão Figures 543–550; Map 9

- Micrathena spitzzi* Mello-Leitão, 1932: 79, fig. 2, ♀. Female holotype from Alto da Serra, Est. São Paulo, Brazil (MNRJ), examined.
- Ildibaha misionesa* Mello-Leitão, 1945a: 238, figs. 12–13, ♀. Juvenile (penultimate female) holotype



Map 9. Distribution of *Micrathena* species of the *schreibersi* group.

from Pindapoy, Misiones Province, Argentina (MULP), examined. NEW SYNONYMY.

*Ildibaha acanthomasta* Mello-Leitão, 1945b: 264, figs. 4, 6, ♀. Female holotype from Barigüí, Paraná, Brazil in the Museu Paranaense, not available. NEW SYNONYMY.

*Synonymy.* Mello-Leitão named this species three times. The abdomen of the *M. spitzi* type specimen is shrivelled. *Ildibaha acanthomasta* was recognized from the illustrations.

*Description.* Female. Carapace rich brown. Sternum orange to dark brown. Legs light brown, banded darker; distal

articles lighter. Dorsum of abdomen *Cyclosa*-like with black and white paired and median marks; sides black with two dorsoventral white bands, one anterior, one about the middle; venter black (Fig. 544). Carapace widest in anterior half, with an indistinct median thoracic mark and a slight depression on each side posteriorly (Fig. 544). Femora with rows of indistinct humps on venter. Abdomen soft, *Cyclosa*-like, without sclerotized plates on sides, five pairs of humps, each tipped by a tiny spine, and sclerotized ring around spinnerets (Figs. 543, 544). Total length, 12.5

mm. Carapace, 4.0 mm long, 2.4 mm wide. First femur, 2.9 mm; patella and tibia, 2.9 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm. Second patella and tibia, 2.7 mm; third, 1.9 mm. Fourth femur, 3.7 mm; patella and tibia, 3.5 mm; metatarsus, 2.3 mm; tarsus, 0.9 mm.

Male. Carapace, sternum dark brown. Legs orange, articles darker on anterior and posterior. Dorsum of abdomen black with some paired white spots (Fig. 548); venter black. No coxal hook. First and second femora have pairs of indistinct humps. Abdomen with several constrictions, like female (Fig. 548). Total length, 6.7 mm. Carapace, 3.2 mm long, 1.9 mm wide. First femur, 1.9 mm; patella and tibia, 1.9 mm; metatarsus, 1.3 mm; tarsus, 0.7 mm. Second patella and tibia, 1.8 mm; third, 1.1 mm. Fourth femur, 2.4 mm; patella and tibia, 2.1 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm.

*Variation.* Females vary in total length from 10.2 to 14.1 mm. The shape of the projecting epigynum is slightly variable.

*Note.* The similarity of male and female suggests that they belong together.

*Diagnosis.* *Micrathena spitzzi* differs from all other *Micrathena* by its *Cyclosa*-like appearance: abdomen two to three times as long as wide, with ten humps (Figs. 543, 544), and the epigynum which has the bulge indented on each side anteriorly (Figs. 545, 547). The male is separated from others having the abdomen constricted posteriorly (Fig. 548) and by the distinct median apophysis having one tooth (Fig. 549).

*Natural History.* Two specimens were collected in forest near São Paulo.

*Distribution.* Southeastern Brazil (Map 9).

*Records.* BRAZIL: *Est. Rio de Janeiro.* Teresópolis, 11 March 1946, 3♀ (H. Sick,

AMNH); Petrópolis, 2♀ (Arlé, MNRJ); Rezende, ♀ (Arlé, MZSP). *São Paulo.* São Paulo, 10 April 1965, 2♀ (H. Levi, MCZ), 3♀ (P. Biasi, MZSP); Pirassununga, ♀ (Schubart, MZSP); Aqua Tunda, 16 March 1961, ♂ (H. M. Canter, MZSP). *Paraná.* Rolândia, 1947, 4♀ (A. Maller, AMNH); Cavinna, 1947, 6♀ (A. Maller, AMNH). *Rio Grande do Sul.* Itaúba, Arroio do Tigre, 18 April 1978, 4♀ (A. Lise, FZRS); Cachoeira do Sul, 3 July 1977, ♀ (A. Witeck, FZRS).

*Micrathena embira* new species  
Figures 551–555; Map 9

*Holotype.* Female from mouth of Rio Embira, Rio Jurura, N. Amazonia [sic, western Amazonia], Brazil, in poor condition, having oviposited and having lost most legs (AMNH). The specific name is a noun in apposition after the type locality.

*Description.* Female. Carapace blackish brown, rim light. Sternum, legs brown. Abdomen leathery dark brown underlain with some white pigment. Carapace with one pair of anterior dimples and distinct thoracic depression. Abdomen with fourteen spines, the fifth pair, the posterolaterals largest (Figs. 551, 552). Total length, 8.9 mm. Carapace, 3.0 mm long, 2.2 mm wide. First femur, 3.0 mm. Fourth femur, 3.7 mm; patella and tibia, 3.0 mm; metatarsus, 2.0 mm.

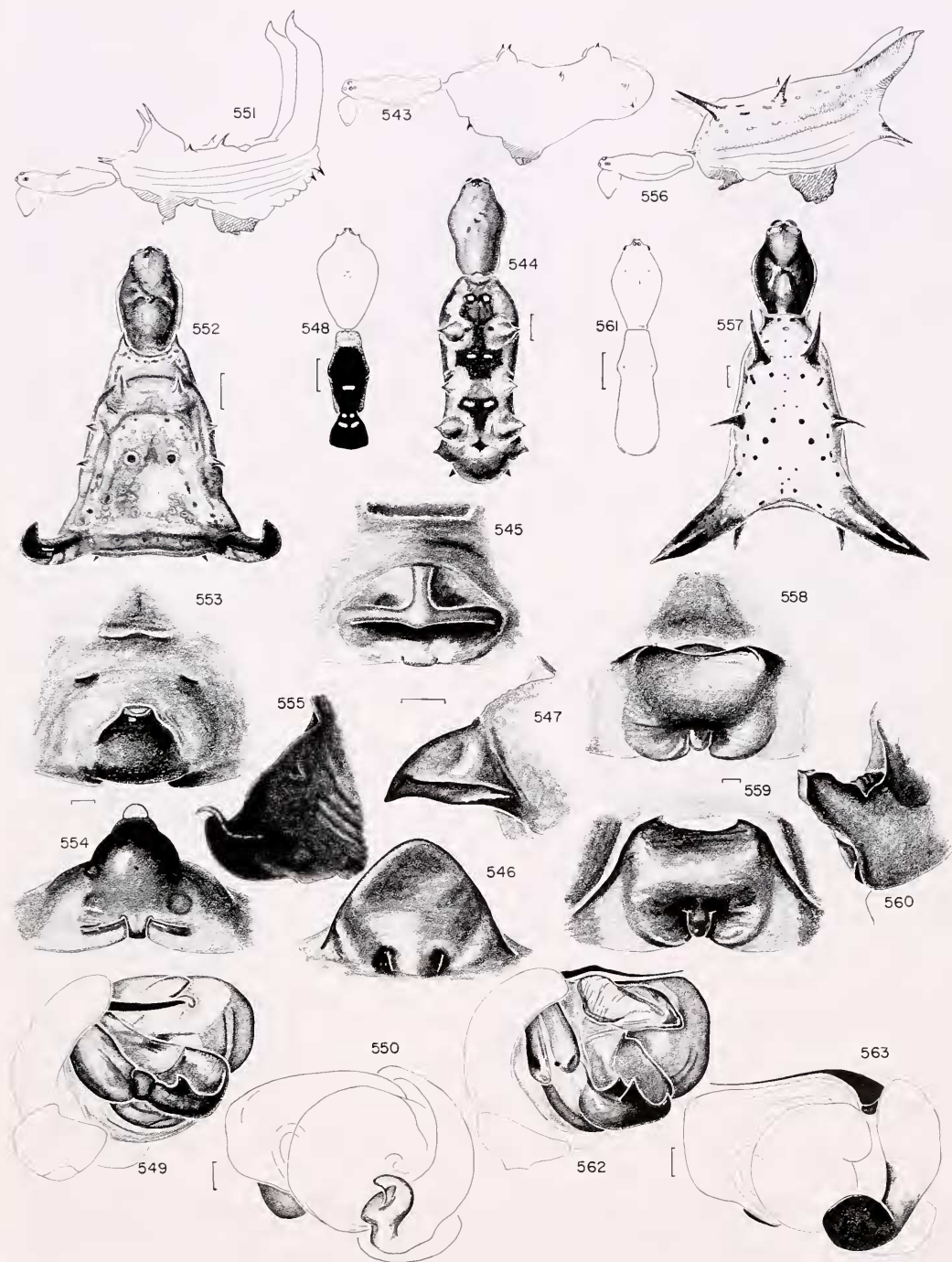
*Diagnosis.* The fourteen spines of the abdomen (Figs. 551, 552) and the epigynum, with its small projecting lobe on the anterior face of the globular bulge (Figs. 553–555), separate *M. embira* from others of the *schreibersi* group.

*Micrathena balzapamba* new species  
Figures 556–563; Map 9

*Holotype.* Female from Balzapamba, Bolívar Prov., Ecuador, 700 m el., June 1938 (W. Clarke-MacIntyre, AMNH). The species is named after the

Figures 543–550. *Micrathena spitzzi* Mello-Leitão. 543–547. Female. 543. Lateral. 544. Dorsal. 545. Epigynum, ventral. 546. Epigynum, posterior. 547. Epigynum, lateral. 548–550. Male. 548. Dorsal. 549. Left palpus, mesal. 550. Palpus, lateral.

Figures 551–555. *Micrathena embira* n. sp., female. 551. Lateral. 552. Dorsal. 553. Epigynum, ventral. 554. Epigynum, posterior. 555. Epigynum, lateral.



Figures 556–563. *Micrathena balzapamba* n. sp. 556–560. Female. 556. Lateral. 557. Dorsal. 558. Epigynum, ventral. 559. Epigynum, posterior. 560. Epigynum, lateral. 561–563. Male. 561. Dorsal. 562. Palpus, mesal. 563. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 543, 544, 548, 551, 552, 556, 557, 561, 1.0 mm.

type locality, the specific name a noun in apposition.

*Description.* Female. Carapace dark brown with white rim, clypeus orange. Sternum orange underlain by white pigment, darkest in center. Legs orange. Dorsum of abdomen white framed by black, sides with longitudinal white bands; venter black with some light pigment (Fig. 557). Carapace with one pair of dimples, shallow thoracic depression and wide rims. Abdomen with short anterior spines overhanging carapace and four pairs of large spines (Figs. 556, 557). Total length, 11.7 mm. Carapace, 4.1 mm long, 3.0 mm wide. First femur, 4.2 mm; patella and tibia, 4.5 mm; metatarsus, 2.6 mm; tarsus, 1.2 mm. Second patella and tibia, 4.0 mm; third, 2.6 mm. Fourth femur, 6.0 mm; patella and tibia, 5.0 mm; metatarsus, 3.3 mm; tarsus, 1.2 mm.

Male. Carapace dark brown, black on sides, shiny. Sternum brown. Legs shiny brown, first two femora darkest. Dorsum of abdomen brown, shiny; lighter brown anteriorly; lighter brown patch in waist region, and a lighter brown patch on each side posteriorly; venter dark; sclerotized areas brown. Carapace with shallow indistinct thoracic depression and one anterior pair of dimples. No coxal hook. Abdomen slightly constricted in middle, with a minute black nipple on each side anterior to constriction (Fig. 561). Total length, 6.0 mm. Carapace, 2.5 mm long, 1.4 mm wide. First femur, 1.8 mm; patella and tibia, 1.8 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 1.5 mm; third, 1.0 mm. Fourth femur, 2.0 mm; patella and tibia, 1.7 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 9.7 to 13.3 mm.

*Diagnosis.* *Micrathena balzapamba* females differ from both *M. schreibersi* and *M. vigorsi* by the distinctive epigynum with its transverse ridge, the base of a torn-off scape (Figs. 558–560). A specimen received after completion of the illustrations had a small thin and soft scape. The paracymbium of the male palpus is flat, disk-shaped (Fig. 563), and the median apophysis has three spines (Fig. 562).

*Distribution.* Ecuador (Map 9).

*Paratypes.* ECUADOR: *Prov. Bolívar.* Balzapamba, 700 m, May 1938, ♀; 26 May 1938, ♀; 28 May 1938, ♂ (all W. Clarke-MacIntyre, AMNH); Naranjapata, 10 June 1958, ♀ (C. H. Dodson, CAS). *Los Ríos.* Playas de Montalvo, 20 April 1938, ♀ (W. Clarke-MacIntyre, AMNH); km 56 Quevedo to Santo Domingo, 28 Jan. 1973, ♀ (V. Brach, MCZ); Jauneche, 20 April 1984, ♀ (L. Avilés, MECN). *El Oro.* Palmales, ♀ (J. Sztoleman, PAN).

### *Micrathena schreibersi* (Perty)

Plate 1; Figures 564–572; Map 9

*Acrosoma schreibersi* Perty, 1833: 194, pl. 38, fig. 9, ♀. Female from equatorial Brazil (ZSM), destroyed in the last war.

*Acrosoma spinosum*.—C. L. Koch, 1836: 56, pl. 210, ♀. Not *A. spinosa* (Linn.). Misidentification.

*Plectana macracantha* Walckenaer, 1841: 183. New name for *A. spinosum*.—C. L. Koch, thought misidentified.

?*Plectana duplicata* Walckenaer, 1841: 194. Female from Brazil. DOUBTFUL NEW SYNONYMY.

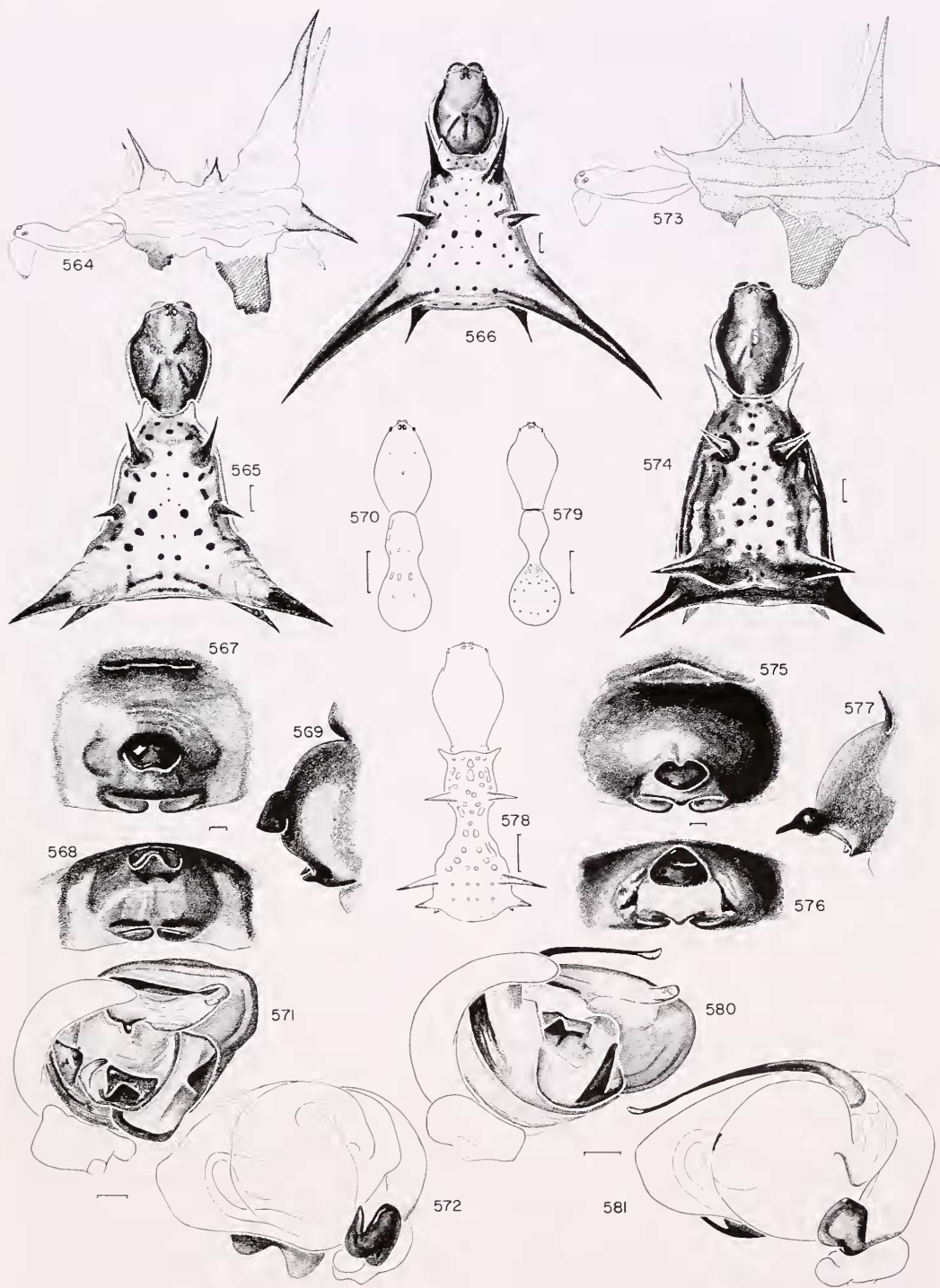
*Plectana vespoidea* Walckenaer, 1841: 196. Specimen from Cayenne, French Guiana, lost. NEW SYNONYMY.

*Acrosoma myrmeciaeformis* Taczanowski, 1872: 280, pl. 6, fig. 30. Juvenile holotype from Cayenne, French Guiana (PAN), examined. NEW SYNONYMY.

Figures 564–572. *Micrathena schreibersi* (Perty). 564–569. Female. 564. Lateral. 565, 566. Dorsal. 565. (Panama). 566. (Putumayo, Colombia). 567. Epigynum, ventral. 568. Epigynum, posterior. 569. Epigynum, lateral. 570–572. Male. 570. Dorsal. 571. Left palpus, mesal. 572. Palpus, lateral.

Figures 573–581. *Micrathena vigorsi* (Perty). 573–577. Female. 573. Lateral. 574. Dorsal. 575. Epigynum, ventral. 576. Epigynum, posterior. 577. Epigynum, lateral. 578. Juvenile. 579–581. Male. 579. Dorsal. 580. Palpus, mesal. 581. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 564–566, 570, 573, 574, 578, 579, 1.0 mm.



*Acrosoma tenuis* Taczanowski, 1873: 276, pl. 6, fig. 27. Juvenile female holotype and male paratype from Cayenne, French Guiana (PAN), examined. NEW SYNONYMY.

*Acrosoma subtilis* Taczanowski, 1873: 277, pl. 6, fig. 29. Juvenile syntypes from Saint Laurent de Maroni, French Guiana (PAN), examined. NEW SYNONYMY.

*Micrathena schreibersi*.—F. P.-Cambridge, 1904: 536, pl. 51, fig. 19, ♀. Reimoser, 1917: 137, pl. 9, fig. 27, ♀. Roewer, 1942: 963. Bonnet, 1957: 2877. Chickering, 1961: 452, figs. 157–168.

*Ildibaha myrmeciaeformis*.—Roewer, 1942: 953. Bonnet, 1957: 2296.

*Micrathena subtilis*.—Reimoser, 1917: 129. Roewer, 1942: 964. Bonnet, 1957: 2880.

*Micrathena tenuis*.—Reimoser, 1917: 136. Roewer, 1942: 965. Bonnet, 1957: 2880.

*Micrathena coleophora* Chamberlin and Ivie, 1936: 56, pl. 16, fig. 136, ♂. Male holotype from Barro Colorado Island, Panama (AMNH), examined. Synonymized by Chickering, 1961.

*Micrathena lesserti* Mello-Leitão, 1939: 70, figs. 48–50, ♀. Female holotype from Buenaventura, Colombia (NMB), examined. NEW SYNONYMY.

*Synonymy.* Walckenaer's *Plectana duplicata* and *P. vespoides* might both be this species. The first, a 15 mm-long female, has six posterior spines and two anterior, and a carapace with a yellow seam; *P. vespoides* is a male. The juvenile type of *Acrosoma myrmeciaeformis* is only 3.8 mm long, has ten spines and a constricted abdomen, as have juveniles of this species. *Acrosoma tenuis* is a juvenile female 5.4 mm long with spines and abdomen shaped like an adult and is accompanied by an adult male of this species. There are three juveniles of *Acrosoma subtilis*, 5.0 mm in total length with only eight spines, the anterolaterals small. They are probably this species. *Micrathena lesserti* is an adult female; *M. coleophora* is an adult male. Reimoser labeled some specimens of this species in collections as *M. spinosa*, a misidentification.

*Description.* Female from Panama. Carapace dark brown-black, rim white, clypeus orange. Sternum dark brown with orange edge, legs dark brown. Dorsum of abdomen white; orange to crimson at base of large spines. Black patches anteriorly and on sides; anterolateral spines white, others black; sides black with white lon-

gitudinal band; venter black with white marks around base of black spinneret cone (Figs. 565, 566). Carapace shiny and smooth, with an anterior pair of dimples and distinct pairs of grooves radiating from circular thoracic depression, rim distinct. Leg articles with tubercles. Abdomen with pair of small blunt spines overhanging carapace and four pairs of large spines (Figs. 564–566). Cone surrounding spinnerets longer than wide (Fig. 564). Total length, 11.5 mm. Carapace, 4.1 mm long, 3.4 mm wide. First femur, 5.3 mm; patella and tibia, 5.3 mm; metatarsus, 3.6 mm; tarsus, 1.3 mm. Second patella and tibia, 4.8 mm; third, 3.0 mm. Fourth femur, 6.5 mm; patella and tibia, 5.9 mm; metatarsus, 4.0 mm; tarsus, 1.2 mm.

Male from Panama. Carapace, sternum, legs, dorsum, venter and sides of abdomen orange; gray on venter anterior and posterior to spinnerets. Carapace shiny and smooth, with one pair of anterior dimples and a median thoracic mark; lacking rim. No coxal hook. First and second legs have some macrosetae. Abdomen with a constricted waist (Fig. 570). Total length, 4.7 mm. Carapace, 2.2 mm long, 1.4 mm wide. First femur, 1.6 mm; patella and tibia, 1.7 mm; metatarsus, 1.0 mm; tarsus, 0.6 mm. Second patella and tibia, 1.4 mm; third, 0.8 mm. Fourth femur, 1.4 mm; patella and tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 9.8 to 13.7 mm, males from 4.7 to 5.6 mm. The spines of some females from Colombia are much longer (Fig. 566) than those of Panamanian specimens. Some males have the carapace orange-rugose, others are much darker in color, almost black. Immatures have the third pair of spines minute or absent. Young males lack spines. An adult from Carillo, Costa Rica in the MCZ collection has the third pair of spines missing.

*Note.* Males and females are commonly collected together. Males and juveniles have the appearance of ants and may be mimics (Levi, in press). Chickering (1960)



first matched males with females, although he reported that Banks had already matched sexes but had not published on it.

*Diagnosis.* In females the area between the second and third pairs of spines is wider than long (Figs. 565, 566); in *M. vigorsi* longer than wide. The epigynum has a large median scale with the attached (anterior) end straight (Figs. 567–569); in *M. vigorsi* the attached end has a notch. The male's median apophysis lacks the prong present in *M. vigorsi* (Fig. 571).

*Natural History.* *Micrathena schreibersi* makes its web in forests and shady areas.

*Distribution.* Nicaragua to southeastern Brazil (Map 9).

*Records.* NICARAGUA: Musawas [Guabul], Waspuc River, Oct. 1955, ♂ (B. Malkin, AMNH). COSTA RICA: *Heredia* Prov. Puerto Viejo, La Selva (MCZ, ZMCR). *Limón.* Hamburg Farm, 2♀ (NMW); Siquirres (AMNH). *San José.* San José (MCZ); Carillo (MCZ). *Cartago.* Turrialba (MCZ, AMNH). PANAMA: *Bocas del Toro.* Río Changuinola, 16 km W of Almirante (AMNH). *Panamá.* Arraiján, (MCZ); Barro Colorado Isl., (MCZ); Pipeline Road (MCZ). Cerro Galero (MCZ). *Colón.* Pelucca, Boqueron Riv. (MCZ). LESSER ANTILLES: *Trinidad.* Mt. St. Benedict (CUC); Los Banguizales, Cedros (AMNH). VENEZUELA: *Est. Monagas.* Caripito (AMNH). *Miranda.* Pico Naiquatá (AMNH). *Bolívar.* Hato la Vergarena (AMNH). GUYANA: Kamakusa (AMNH); Kartabo (CUC). Sauri-wau Riv., Tacutu (AMNH). Upper Ireng Riv., Pakaraima Mts. (AMNH). Issororo (BMNH); Cannister Falls (BMNH); Yawakuri Riv., (BMNH). SURINAME: *Saramacca* Prov. Voltzberg-Raleighvallen Nature Reserve (MCZ); Paramaribo (MCZ). FRENCH GUIANA: Cayenne (PAN). COLOMBIA: *Dept. Meta.* Villavicencio (MCZ). *Cordoba.* Andagoga, Río Condato and Río San Juan (BMNH). *Antioquia.* Mutatá (MCZ). *Valle.* 20 km E of Buenaventura (MCZ). *Boyacá.* Río Suárez (AMNH). *Putumayo.*

*Pto. Asis* (MCZ). ECUADOR: *Prov. Napo.* Pompeya Riv. (MCZ). Coca, Napo Riv. (MCZ); Limoncocha (MECN); Tarapuy (MECN). *Esmeralda.* Quininde (MECN). PERU: *Dept. Loreto.* Yurimaguas (AMNH); Iquitos (MCZ). *Ucayali.* La Frontera, Upper Utoquinia, 6♀ (AMNH); Ucayali Riv. (AMNH). *Huánaco.* Tingo María (EPC). *San Martín.* 20 km NE of Moyobamba (AMNH). BRAZIL: *Terr. Amapá.* Uaçá (PAN); Rio Tracajatuba (IBSP); Santana, Rio Metapí (MEG); Serra do Navio (CAS); Vila Amazonas (MZSP). *Roraima.* Rio Branco (NMW); Mt. Roraima; Arabupus (AMNH). *Est. Pará.* Belém (MNHN, MCZ, IBSP, MEG, CAS); Canindé (AMNH); Rio Gurupi (MZSP); Tiriós, Paru (MZSP); Santarém (NMW). *Amazonas.* Manaus (MCZ, NRS, INPA); Rio Autaz, Capiroanga (NRS); Lago Jacaré, Rio Solimões (MZSP). *Rondonia.* Pôrto Velho (AMNH). *Pernambuco.* Recife (MZSP); Mamanguape (MZSP); Tapera (IBSP). *Bahia.* Salvador (CAS, ZMK); Piraja (MCZ). *Minas Gerais.* Alto Rio Doce (MZSP). *Espírito Santo.* Rio São José (MZSP). *Santa Catarina.* Blumenau (NMW).

*Micrathena vigorsi* (Perty)  
Figures 573–581; Map 9

*Acrosoma vigorsii* Perty, 1833: 194, pl. 38, fig. 8, ♀. Female from equatorial Brazil (ZSM), destroyed in last war. C. L. Koch, 1839: 123, fig. 520, ♀.

*Acrosoma defensa* Butler, 1873: 420. Female holotype in poor condition, formerly pinned, from Pará [Belém], Brazil (BMNH), examined. NEW SYNONYMY.

*Ildibaha mutilloides* Simon, 1895: 850, figs. 899, 900; 1896: 471. Male lectotype here designated and male and juvenile paralectotypes from Pebás [Dept. Loreto, Peru], Le Pará [Belém] and São Paulo de Olivença [Est. Amazon], Brazil (MNHN), examined. Roewer, 1942: 952. Bonnet, 1957: 2296. NEW SYNONYMY.

*Micrathena vigorsi*:—Petrunkevitch, 1910: 214, pl. 21, figs. 16–19, ♀. Reimoser, 1917: 132, pl. 8, fig. 24, ♀. Roewer, 1942: 966. Bonnet, 1957: 2881.

*Micrathena defensa*:—Reimoser, 1917: 133. Roewer, 1942: 956. Bonnet, 1957: 2865.

*Synonymy.* The specimen of *A. defensa* is an adult female. *Ildibaha mutilloides*

is a male with a constricted abdomen; its similarity to the male of *M. schreibersi* suggests that it is the male of *M. vigorsi*. Also, juveniles of *M. vigorsi* are known to have a constricted abdomen (Fig. 578).

*Description.* Female from Mato Grosso. Carapace brown-black with white rim. Sternum, legs brownish black. Dorsum of abdomen boldly marked black and white, first pair of spines white, others black; venter black. Carapace with a wide rim, three pairs of shallow dimples and a median thoracic mark. Legs corniculate. Abdomen with ten large spines, two pairs anterior, one posterodorsal, and two posterior (Figs. 573, 574). Total length, 14.5 mm. Carapace, 5.1 mm long, 4.0 mm wide. First femur, 6.5 mm; patella and tibia, 5.5 mm; metatarsus, 3.6 mm; tarsus, 1.4 mm. Second patella and tibia, 5.0 mm; third, 3.4 mm. Fourth femur, 7.2 mm; patella and tibia, 6.2 mm; metatarsus, 3.7 mm; tarsus, 1.4 mm.

Male lectotype of *I. mutilloides*. Carapace, sternum dark orange. Legs orange, the last femora darker. Abdomen with two white spots on anterior of dorsum. Carapace evenly domed, dull in appearance, no thoracic depression. First and second tibia and metatarsus with some macrosetae. Abdomen constricted in middle, lightly sclerotized on dorsum, sclerotized on venter in constricted area and in genital area (Fig. 579). No coxal hook. Total length, 4.8 mm. Carapace, 2.0 mm long, 1.2 mm wide. First femur, 1.4 mm; patella and tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.3 mm; metatarsus, 0.7 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 12.8 to 15.8 mm. The notch at the anterior of epigynum lobe is variable in size. An immature (? male) is illustrated by Figure 578.

*Note.* Males and females have not been collected together; their similarity to males and females of *M. schreibersi* suggests that they belong together (see above).

*Diagnosis.* *Micrathena vigorsi* differs from the similar *M. schreibersi* by having the distance between second and third pairs of spines greater than the width of the abdomen (Fig. 574), and by having the median lobe of the epigynum heart-shaped in ventral view, with an anterior notch (Figs. 575–577). Males differ by having a prong on the median apophysis (Fig. 580).

*Distribution.* Colombia to Brazil (Map 9).

*Records.* COLOMBIA: *Dept. Meta.* 20 km N of Río Muco, ♀ (W. Eberhard, MCZ). *Boyacá-Santander.* Río Suárez, 600–1,000 m, 11–12 Aug. 1946, 3♀ (AMNH). *Coque-tá.* Río Orteguzaza, Aug.–Sept. 1947, 2♀ (L. Richter, AMNH). ECUADOR: *Prov. Napo.* Coca and Napo Rivers, 24–30 April 1965, ♀ (L. Peña, MCZ); Limoncocha, 2 April 1983, ♀ (L. Avilés, MECN). PERU: *Dept. Loreto.* Iquitos, Feb.–May 1920, 8♀ (H. S. Parrish, MCZ); 1912, ♀ (AMNH). *Huánuco.* Cucharas, Feb.–Apr. 1954, 8♀, imm. (F. Woytkowski, EPC). *Lima.* Bosque Huacamayo, March 1969, ♀ (O. Meneses, IBSP). BRAZIL: *Est. Pará.* Belém, May 1927, 2♀ (Zerny, NMW). *Amazonas.* Río Purus, Hyutanahã, 7 Feb. 1914, ♀ (A. Roman, NRS); 3–5 km E of Leticia [Colombia], 8 July 1977, ♀ (R. M. Shelley, MCZ); Tefé, Nov.–Dec. 1920, ♀ (H. S. Parrish, MCZ); Río Uaupés, 2♀ (EPC). *Rondonia.* Abunã, March 1922, 3♀ (J. H. Williamson, MCZ), ♀ (J. W. Strohm, MCZ); Vila Murtinho, 5–7 April 1922, ♀, 28–30 March 1922, 2♀ (J. H. Williamson, MCZ). BOLIVIA: *Dept. Santa Cruz.* Buena Vista, Feb. 1951, 4♀ (Prosem, MULP).

### The *militaris* Group

Females of the *militaris* group are characterized by having the abdomen squared or wider than long, with three to four pairs of spines, the third always largest (Figs. 598, 609, 621, 634); except in *M. swainsoni* (Fig. 639). The bulge of the epigynum has a pocket or groove on the posterior slope on each side of the tip (Figs. 584, 599, 622, 627, 635). These posterior

grooves are absent in *M. swainsoni* (Figs. 640, 641). The carapace is low, with a distinct thoracic depression but no dimples (Figs. 589, 620, 638). The book-lung covers lack a stridulating surface.

Males have the palpal tibia drawn out mesally into one or two fingers, as in the *spinosa* group (Figs. 595, 603, 614, 644). Unlike the *spinosa* group, the median apophysis forms two lobes (Figs. 587, 603) or spines (Figs. 595, 631); in *M. swainsoni* the median apophysis consists of three pieces (Fig. 644). Males lack the coxal hook and groove on the second femur.

The *spinosa* group may be a subgroup of the *militaris* group.

Species differ in the posterior view of the epigynum and in the form of spines and abdomen. Males differ in the length and curvature of the embolus, shape of the median apophysis and paracymbium.

KEY TO THE *MILITARIS* GROUP

Females

- 1. Third spine pair several times length of abdomen (Fig. 621); Amazon area, Map 10 ..... *cyanospina*
- Third spines as long or shorter than abdomen (Figs. 598, 634) ..... 2
- 2(1) Abdomen rectangular, length more than twice width (Fig. 639); southeastern South America, Map 10 ..... *swainsoni*
- Abdomen subtriangular or wider than long (Figs. 609, 626) ..... 3
- 3(2) Third pair of spines with tiny spine crowning a thicker portion (Figs. 633, 634); Amazon area, Map 10 ..... *hamifera*
- Third pair of spines without set off tip (Figs. 583, 609, 616) ..... 4
- 4(3) Epigynum with a projecting posterior lobe, seen best in lateral view (Fig. 586); eastern North America to Panama, Map 10 ..... *sagittata*
- Epigynum otherwise (Figs. 591, 599); West Indies, South America ..... 5
- 5(4) Abdomen with distinct fourth (or third) pair of spines behind the largest (Figs. 609, 616, 626); southeastern South America, Map 10 ..... 6
- Abdomen with at most a pair of denticles behind large spines (Fig. 589); West Indies, Map 10 ..... 8
- 6(5) Abdomen subtriangular, about as wide as long; last spine subequal to the one before (Fig. 626) ..... *furcata*

- Abdomen wider than long, with last spine distinctly smaller than penultimate (Figs. 609, 616) ..... 7
- 7(6) Third pair of spines slender (Fig. 616); epigynum with tubercle on tip (Figs. 617-619) ..... *reimoseri*
- Third pair of spines thick (Fig. 609); epigynum without tubercle on tip (Figs. 610-612) ..... *lata*
- 8(5) Epigynum with a small light-colored transverse piece on tip (Fig. 599-601) ... *militaris*
- Epigynum lacking transverse piece on tip (Figs. 591-593); Cuba, Map 10 ..... *banksi*

Males

Males of *M. cyanospina*, *M. hamifera*, *M. reimoseri* are unknown; male of *M. lata* of uncertain association.

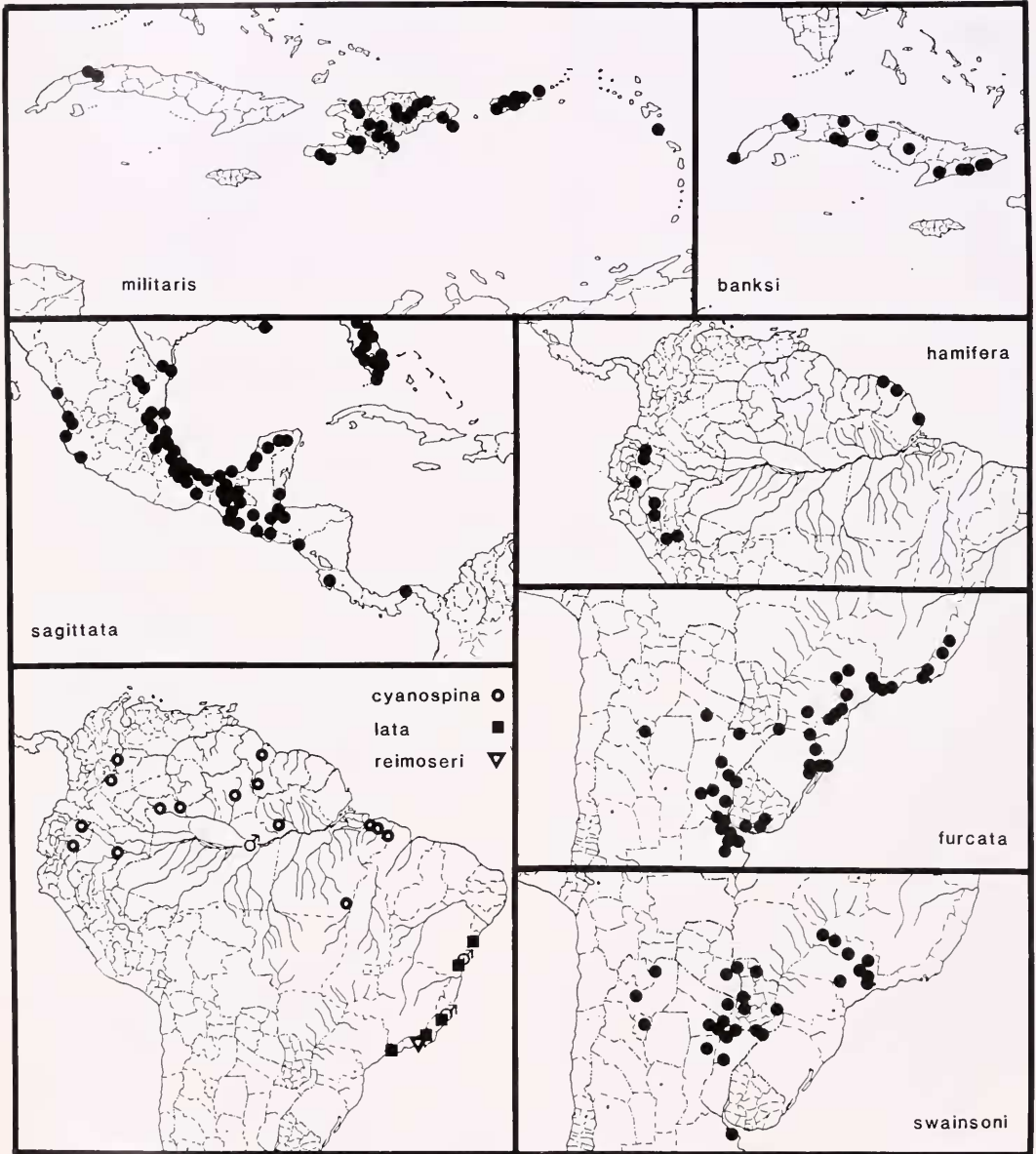
- 1. Abdomen with 8 sharp spines (Fig. 643); southeastern South America, Map 10 ..... *swainsoni*
- Abdomen with at most faint indications of spines (Figs. 602, 613) ..... 2
- 2(1) Conductor a heavy curved hook (Fig. 614) ..... suspected male of *lata*
- Conductor otherwise ..... 3
- 3(2) Embolus S-shaped, crossed by terminal apophysis (Fig. 631); southeastern South America, Map 10 ..... *furcata*
- Embolus straight, curved, or if S-shaped partly hidden by median apophysis (Figs. 587, 595, 603) ..... 4
- 4(3) Embolus curved (Fig. 587); terminal apophysis small, not visible in lateral view (Fig. 588); eastern North America to Panama, Map 10 ..... *sagittata*
- Embolus only curved at proximal end (Figs. 595, 603); terminal apophysis visible in lateral view (Figs. 596, 604); West Indies, Map 10 ..... 5
- 5(4) Embolus slender and curved "above" cymbium (Figs. 595, 596); paracymbium large (Fig. 596); Cuba, Map 10 ..... *banksi*
- Embolus shorter, heavier, not curved above cymbium (Figs. 603, 604); paracymbium small (Fig. 604); West Indies, Map 10 ..... *militaris*

*Micrathena sagittata* (Walckenaer)  
 Figures 582-588; Map 10

*Plectana sagittata* Walckenaer, 1841: 174. The name was applied to an Abbot illustration of Georgia spiders.

*Micrathena sagittata*:—Levi, 1978: 430, figs. 41-54, map 2.

*Note.* My illustration of the male palpus (1978: fig. 5a) is quite inadequate. The median apophysis is bilobed. The S-shaped



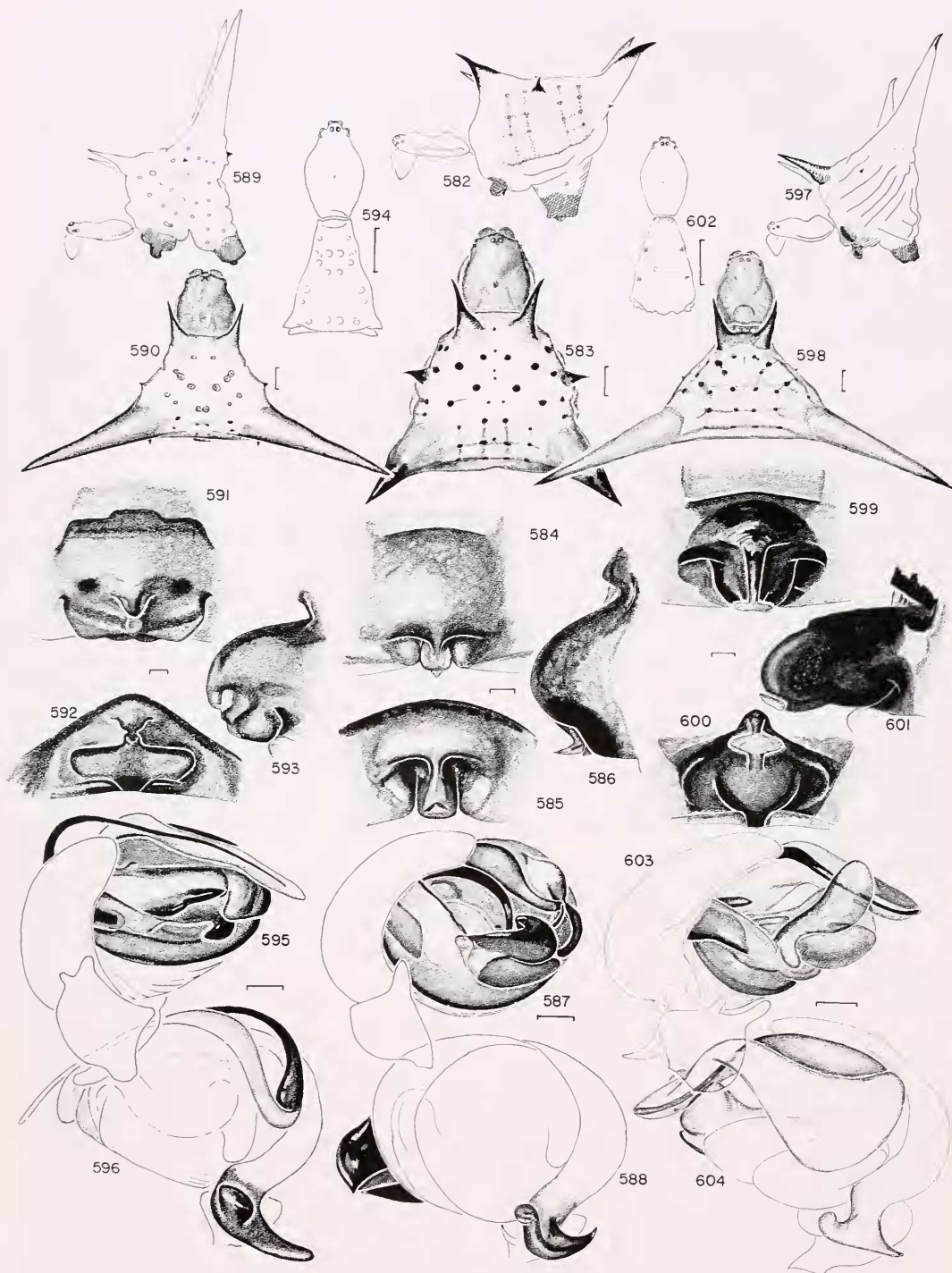
Map 10. Distribution of *Micrathena* species of the *militaris* group.

Figures 582–588. *Micrathena sagittata* (Walckenaer). 582–586. Female. 582. Lateral. 583. Dorsal. 584. Epigynum, ventral. 585. Epigynum, posterior. 586. Epigynum, lateral. 587–588. Male. 587. Left palpus, mesal. 588. Palpus, lateral.

Figures 589–596. *Micrathena banksi* n. sp. 589–593. Female. 589. Lateral. 590. Dorsal. 591. Epigynum, ventral. 592. Epigynum, posterior. 593. Epigynum, lateral. 594–596. Male. 594. Dorsal. 595. Palpus, mesal. 596. Palpus, lateral.

Figures 597–604. *Micrathena militaris* (Fabricius). 597–601. Female. 597. Lateral. 598. Dorsal. 599. Epigynum, ventral. 600. Epigynum, posterior. 601. Epigynum, lateral. 602–604. Male. 602. Dorsal. 603. Palpus, mesal. 604. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 582, 583, 589, 590, 594, 597, 598, 602, 1.0 mm.



black embolus is hidden in part by the upper lobe of the median apophysis, but its tip is visible touching the tip of the terminal apophysis. Both tips are supported by the conductor (Fig. 587). The palpal tibia is drawn out into one finger (Fig. 587) sometimes two (1978: fig. 53).

*Variation.* Females vary in total length from 7.5 mm to 9.4 mm, males from 4.3 to 5.5 mm. Females and juveniles from Central Mexico have a minute spine underneath the posterodorsal spine (Fig. 582). The thickness of spines varies.

*Diagnosis.* This is the only species of this group found in Mexico or Central America. Females differ from others of this group by having six dorsal spines (sometimes with a minute spine posteriorly; Figs. 582, 583), and by the shape of the epigynum: a pair of depressions behind eyebrowlike swellings, with a small projecting lobe on the septum (Figs. 584–586). The shorter, curved embolus, the single finger on the palpal tibia (Fig. 587), and the short, curved paracymbium (Fig. 588) separate males from those of *M. militaris* and *M. banksi*.

*Distribution.* Eastern North America to Panama, not in West Indies; West Indian references are all misidentifications (Map 10).

*Records.* MEXICO: *Est. Tamaulipas.* Antigue Morelos. *Nuevo León.* Montemorelos. *San Luis Potosí.* Valles; San Joaquín; Tamazunchale; near Xilitla; 5 km W El Naranjo. *Sinaloa.* San Ignacio. *Nayarit.* Tepic. *Jalisco.* Puerto Vallarta; San Blas. *Colima.* Armeria. *Veracruz.* Tres Valles; Veracruz; Córdoba; Martínez de la Torre; Papantla; Lago Catemaco; Fortín; La Buena Ventura; Tlacojalpan; Tuxtilla; Tuxpan; Istmo de Tehuantepec; Tlapacoyan; Tecolutla; Potrero; Jalapa; Coscomatepec; N of Catemaco. *Puebla.* Huauchinango; Villa Juárez. *Oaxaca.* Palomares; Papaoapan; Paso Real, Río Tonto. *Tabasco.* Cárdenas; 2.4 km of Teapa; Frontera; Teapa; Comalcalco. *Campeche.* Campeche; San José. *Yucatan.* Valladolid; Chichen Itza; 3 km E Chichen Itza;

Uxmal. *Chiapas.* Iztacomitán; Chiapa; Huehuetán; Huixtla; La Zacualpa; Palenque ruins; El Vergel; Simojové. *GUA-TEMALA: Dept. Izabal.* Quirigua; Bananera; Livingston. *Alta Verapaz.* Tucuru. *Suchitepéquez.* Chicacao, El Naranjo; Moca; Variedades. *Chimatenango.* Yepocapa. *San Marcos.* Ayutla. *BELIZE: Cayo Distr.* Mt. Pine Ridge. *HONDURAS: Dept. Copán.* Copán. *EL SALVADOR:* Laguna Apastepeque; Quezaltepeque. *NICARAGUA:* Consiquina slope. *COSTA RICA: Prov. Guanacaste.* Bebedero, 20 June 1930, ♂ (E. Reimoser, NMW). *PANAMA: Prov. Panamá.* Barro Colorado Island, Gatún Lake, 4 Aug. 1935 (J. D. Hood, AMNH), 10 Feb 1936 (W. J. Gertsch, AMNH).

*Micrathena banksi* new species  
Figures 589–596; Map 10

*Micrathena militaris.*—Bryant, 1940: 376, fig. 154, ♀ (not figs. 140, 145). Chickering, 1964: 269, figs. 45–47, ♀ (not figs. 41–44). Misidentification, not *militaris* Fabricius.

*Micrathena cubana.*—Bryant, 1940: 374, fig. 144, ♂. Chickering, 1964: 256, figs. 8–10, ♂. Misidentification, not male of *cubana* Banks.

*Holotype.* Female with one female paratype from Loma del Gato, 800 to 1,000 m, Sierra de Cobre, Santiago Province, Cuba (S. C. Bruner, MCZ). The species is named after Nathan Banks.

*Description.* Female. Carapace, sternum orange-brown. Legs orange. Dorsum of abdomen white with large spines orange; venter and sides black with large white spots. Carapace smooth, with a distinct light rim and a quite shallow thoracic depression (Figs. 589, 590). Sternum sculptured, with three pairs of lateral tubercles and a posterior median tubercle. Abdomen with two pairs large spines, posterior one larger, and two pairs minute denticles, one on side between large spines and one on posterior face of the abdomen (Figs. 589, 590). Total length, 8.0 mm. Carapace, 3.6 mm long, 3.0 mm wide. First femur, 4.3 mm; patella and tibia, 3.6 mm; metatarsus, 2.4 mm; tarsus, 1.2 mm. Second patella and tibia, 3.3 mm; third, 1.9 mm. Fourth femur, 4.5 mm; patella

and tibia, 3.8 mm; metatarsus, 2.5 mm; tarsus, 0.9 mm.

Male. Carapace dark brown, lighter in midline. Sternum black with white pigment all around. Coxae and femora blackish brown, distal article of legs lighter. Dorsum of abdomen blackish with pair of white spots; venter black; posterior face of abdomen white. Carapace corniculate, with a shallow median thoracic depression. Femora corniculate. Abdomen triangular, sides undulating (Fig. 594). Total length, 5.0 mm. Carapace, 2.2 mm long, 1.4 mm wide. First femur, 1.3 mm; patella and tibia, 1.2 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm. Second patella and tibia, 1.1 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 0.5 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 6.5 to 7.7 mm. The small denticles on the abdomen are sometimes missing.

*Diagnosis.* The female differs from *M. militaris* by having eight spines: four large ones and four denticles which are sometimes absent (Figs. 589, 590). The epigynum differs by lacking a transverse, light colored, posterior bar at its tip; unlike *M. militaris* and *M. sagittata* it has a posterior transverse sclerite (Figs. 591–593). The male differs from *militaris* by the longer, curved embolus (Figs. 595, 596) and by the recurved hook-shaped median apophysis (Fig. 596).

*Natural History.* Only one specimen comes with habitat notes: forest.

*Distribution.* Cuba (Map 10).

*Paratypes.* CUBA: *Prov. La Havana.* Havana, 1915, ♀ (T. Barbour and Brooks, MCZ); Santiago de las Vegas, 20 March 1944 (L. Gonzalez, AMNH). *Villa Clara.* Vega Alta, ♀ (P. Bermudez, CUC). *Cienfuegos.* Soledad, Cienfuegos, 1927, ♀, ♂ (several records); Sierra Trinidad, Buenos Aires, July, 2 imm. (Parsons, MCZ). *Camagüey.* San Blas, 13 Aug. 1932, ♀ (B. B. Leavitt, MCZ). *Sancti Spiritus.* Jobosi. *Santiago de Cuba.* Puerto Boniato, 7 April 1946, ♀ (P. Alayon, AMNH); Loma del Gato, Sierra del Cobre, 800–1,000 m, ♂ (S.

C. Bruner, MCZ). *Guantánamo.* Pan de Palenque, 1 Aug. 1955, imm. (A. F. Archer, AMNH); Monte Verde, Guantánamo, 30 Nov. 1971, ♀ (O. Garrido, J. de la Cruz, CASH); Guantánamo, 1913, ♀ (T. Barbour, MCZ). *Granma.* Sierra Maestra, 15–20 May 1948, ♀ (J. Acuña, MCZ). *Pinar del Río.* Guanahacabibes, ♀ (MCZ).

### *Micrathena militaris* (Fabricius)

Figures 597–607; Map 10

*Aranea militaris* Fabricius, 1775: 416. Specimen from America, lost (Zimmsen, 1964). The type locality is here restricted to Hispaniola.

*Aranea armata* Olivier, 1789: 205. Specimen from unknown locality, lost.

*Aranea taurus* Fabricius, 1793: 424. Specimen from Insula St. Domingo.

*Plectana furcata* Walckenaer, 1841: 176. New name for *Araneus armata* and *A. taurus* from Santo Domingo [not *Micrathena furcata* (Hahn) 1833].

*Acrosoma armata*.—C. L. Koch, 1845: 65, fig. 885, ♀.

*Micrathena armata*.—Reimoser, 1917: 152. Franganillo, 1936: 98, fig. 51, ♀.

*Micrathena militaris*.—Petrunkevitch, 1926: 53, figs. 12–15, ♀; 1930: 257. Bryant, 1940: 376, figs. 143, 145, ♂ (not fig. 154, ♀). Chickering, 1964: 269, figs. 41–44, 49–50, ♀, ♂ (not figs. 45–47).

*Micrathena sagittata*.—Petrunkevitch, 1930: 259, records only; misidentification, not *M. sagittata* (Walckenaer).

*Synonymy.* Fabricius described *M. militaris* as having four dorsal spines, the posterior long and open (patentibus). I am here following American authors (Petrunkevitch, Bryant and Chickering), but restrict the type locality of *M. militaris* to Hispaniola.

In the Simon collections in Paris are 11 specimens from Santo Domingo marked *M. armata* which are this species. The Berlin Museum also has old specimens of this species from Puerto Rico and Port au Prince, Haiti marked *M. armata*. Reimoser (1917) considered this species to be *M. armata*, and *M. militaris* to be a four-spined species close to *M. sexspinosa* from South America. But the *M. sexspinosa* group of species have four to six spines in addition to a forked abdomen.

Walckenaer considered *A. armata* and *A. taurus* to be the same, and synony-

mized the names by giving them a new name: *P. furcata*.

*Description.* Female from Dominican Republic. Carapace orange. Sternum orange with some black maculations. Legs blackish. Dorsum of abdomen white to yellow, anterior spines orange to black, posterior spines orange; venter with yellow-white patches and black. Carapace with a fine rim and a median thoracic depression. Lateral eyes more than their diameter apart. Abdomen with two pairs of large spines and usually a tiny tooth on each side (Figs. 597, 598). Total length, 7.5 mm. Carapace, 3.0 mm long, 2.3 mm wide. First femur, 3.3 mm; patella and tibia, 3.0 mm; metatarsus, 2.0 mm; tarsus, 1.1 mm. Second patella and tibia, 2.6 mm; third, 1.7 mm. Fourth femur, 3.5 mm; patella and tibia, 2.9 mm; metatarsus, 1.9 mm; tarsus, 0.9 mm.

Male. Carapace orange-brown. Sternum orange with dark mark in center. Legs orange. Dorsum of abdomen whitish with some paired black patches; venter white and black. Carapace shiny with thoracic depression. Abdomen subtriangular with lobes on posterior margin (Fig. 602). Total length, 4.0 mm. Carapace, 1.8 mm long, 1.0 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.6 mm. Fourth femur, 1.6 mm; patella and tibia, 0.9 mm; metatarsus, 0.5 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 6.0 to 8.1 mm, males from 3.4 to 5.4 mm. The smallest specimens came from Cuba. The tiny teeth on the sides of the abdomen may be missing. The posterolateral spines vary widely in shape: often long and slender (Fig. 598) sometimes much shorter and thicker, giving the abdomen a different profile. The proportions of the abdomen of males are also quite variable.

*Note.* Several males have been collected at collecting sites of females. It is the only species of the *militaris* group in most of the area. The male embolus and ter-

minal apophysis remain in the epigynum after mating (Figs. 605–607).

*Diagnosis.* Females are separated from *Micrathena banksi* and *M. sagittata* by the lightly sclerotized small transverse bar making up the tip of the epigynum (Figs. 599–601). The male has an unusual cylindrical tooth above the radix (Fig. 603); the length of the embolus, intermediate between that of *M. banksi* and *M. sagittata*, distinguishes the species. The lobed median apophysis distinguishes this species from *M. banksi* (Fig. 603).

*Distribution.* Cuba, Hispaniola (common), Puerto Rico to Dominica (Map 10).

*Records.* CUBA: *Prov. La Havana.* Havana, ♀ (AMNH). Santiago del Vegas, 2♂ (MCZ). HAITI: Cap Haïtien, ♀, ♂ (MCZ, CUC); Grand Rivière, ♀ (MCZ); Pétienville, ♀ (MCZ); NE of La Hatte, ♀ (MCZ); Port-au-Prince, ♀, ♂ (MCZ); Furcy, ♀ (MCZ); Diquini, ♀, ♂ (MCZ); Ennery, ♀ (MCZ); 32 km NW of Les Cayes, ♀ (MCZ); Les Cayes, Les Platons, ♀ (MCZ); Kenscoff, 3♀ (AMNH). DOMINICAN REPUBLIC: *Prov. La Vega.* Montañas Cibao, Cordillera Central, ♀, ♂ (AMNH); Loma Cibao, Cord. Central, ♀, ♂ (MCZ); Constanza, Cord. Central, ♂ (MCZ); Jatabacoa, ♀, ♂ (AMNH); Bonao, ♀ (MNSD). *Samana.* Sanchez, ♀, ♂ (MCZ, AMNH). *La Romana.* La Romana, ♀ (AMNH); Isla Saona, Catuano, 3♀ (MNSD). *Duarte.* Villa Riva, ♀ (AMNH); Loma Quita Espuela, 830 m, San Francisco de Macaris, ♀ (MNSD). *Santiago.* S of Santiago, ♀ (MCZ). *Barahona.* Colonia Ranfis, Loma los Pinos, Trujillo Valdez, ♀, ♂ (AMNH); San Lorenzo, ♀ (AMNH); Mt. Busú, Sierra Martín Guarcía, 1,200–1,300 m, ♀ (MCZ); peak of Monte Busú, 1,200–1,300 m, ♀ (MCZ); Polo, ♀ (MNSD). *San Juan.* El Cercado, 3♀ (MNSD); La Hermita, 3♀ (MNSD). *Independencia.* Entre Negba, ♀ (MNSD); Duvergé, ♀ (MNSD). *Estrelleta.* Elias Piña, Río Artibonito, 3♀ (MNSD). *Sánchez Ramírez.* Mina Puebla Viejo, Hatillo, 8♀ (MCZ). PUERTO RICO: Monte El Estado, Maricao, ♂ (MCZ); San Sebastian, ♀ (MCZ); Bosque Estatal de Maricao, ♀



(MCZ); San Juan, ♀ (CUC); Arecibo, Reserva Forestal Cambalache, ♀ (MCZ); Aibonito, ♀, 2♂ (AMNH). La Gloria, Luquillo Range, ♀ (PMYU). VIRGIN ISLANDS: St. Thomas, ♀ (PMYU). DOMINICA: pass on Grand Bay Road, 23 June 1937, 2 juv., ♂ (Roys, MCZ).

*Micrathena lata* Chickering  
Figures 608–615; Map 10

*Micrathena lata* Chickering, 1960a: 6, figs. 8–12, ♀. Female from Teresópolis, Est. Rio de Janeiro, Brazil (MCZ), examined.

**Description.** Female. Carapace orange with head lightest except in midline. Sternum, legs orange. Dorsum of abdomen orange-yellow; black spot on anterior of each posterolateral spine; venter orange. Carapace with median thoracic mark, lacking rim in dorsal view, thorax fairly high (Fig. 608). Abdomen quite high (Fig. 608), wider than long (Fig. 609), with a large posterodorsal spine on each side, a pair of anterior spines overhanging the carapace, a small spine in between on lateral margin, and one below each long posterodorsal spine (Fig. 609). Abdomen with waxy texture. Total length, 7.0 mm. Carapace, 3.0 mm long, 2.4 mm wide. First femur, 3.1 mm; patella and tibia, 2.7 mm; metatarsus, 1.7 mm; tarsus, 0.9 mm. Second patella and tibia, 2.7 mm; third, 1.7 mm. Fourth femur, 3.4 mm; patella and tibia, 2.7 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm.

Male. Carapace, legs brown. Sternum darker brown than coxae. Dorsum of abdomen white with black markings. Venter black around spinnerets, gray on sides with two white spots on posterolateral corner of each side. Carapace with quite indistinct thoracic depression (Fig. 613). No coxal hook. Abdomen trapezoidal, widest posteriorly. Total length, 4.2 mm. Carapace, 1.9 mm long, 1.4 mm wide. First femur, 1.2 mm; patella and tibia, 1.3 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm; third, 0.9 mm. Fourth femur, 1.6 mm; patella and

tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

**Variation.** Females vary in total length from 7.0 to 8.2 mm, males from 3.9 to 4.2 mm.

**Note.** Males have not been collected with females. The male belongs to the same species group but might be *M. reimoseri*.

**Diagnosis.** *Micrathena lata* differs from *M. reimoseri* by having longer fourth pair of spines (Fig. 609) and in details of the epigynum (Figs. 610–612). The male suspected to be this species can be separated from others of this species group by the elaborately shaped and lobed palpal tibia, by the large hook of the conductor, and by the fine spine facing the embolus at the base of the median apophysis (Figs. 614, 615).

**Records.** BRAZIL: *Est. Amazonas*. Manaus, 1 Oct. 1962, ♂ (K. Lenko, MZSP). *Bahia*. Itamarahú, 7 Dec. 1978, 2♀ (J. Santos, FZRS); Camacari, 3 Dec. 1977, ♀ (J. Santos, FZRS), 2 Dec. 1977, ♀ (F. Santos, FZRS); Urucuca, ♂ (F. Santos, FZRS). *Espirito Santo*. Santa Teresa, 29 Sept. 1942, ♂ (B. A. Soares, MZSP). *São Paulo*. Saleópolis, 28 Feb. 1967, ♀ (D. Biasi, MZSP).

*Micrathena reimoseri* Mello-Leitão  
Figures 616–619; Map 10

*Micrathena reimoseri* Mello-Leitão, 1935: 97, fig. 14, ♀. Female lectotype here designated and one paralectotype from Petrópolis, Est. Rio de Janeiro, Brazil (MNRJ), examined. Roewer, 1942: 962. Bonnet, 1957: 2875.

**Description.** Female lectotype. Carapace orange with median dark gray line. Sternum orange. Legs orange; distal articles much darker. Dorsum of abdomen orange with a black spot on each lateral spine and tiny white dots; venter orange with tiny white spots. Carapace with distinct thoracic depression and a shallow dent anterior to thoracic depression. Abdomen much wider than long (Fig. 616). Total length, 7.5 mm. Carapace, 3.1 mm long, 2.7 mm wide. First femur, 3.6 mm; patella and tibia, 3.4 mm; metatarsus, 2.0

mm; tarsus, 0.9 mm. Second patella and tibia, 3.1 mm; third, 2.2 mm. Fourth femur, 3.8 mm; patella and tibia, 3.3 mm; metatarsus, 2.2 mm; tarsus, 0.9 mm.

*Note.* Paralectotype has a wider abdomen and a more anterior projecting bulge on the epigynum, quite distinct from the lectotype. I assume that this is a variable species, and that *Micrathena lata* Chickering might prove to be a synonym.

*Diagnosis.* This species differs from *M. lata* by having the fourth pair of spines minute (Fig. 616, in *M. lata* they are half the length of the third spine) and in having a small knob on the tip on the epigynum (Figs. 617–619). They differ from others of the species group by the wide abdomen (Fig. 616).

*Micrathena cyanospina* (Lucas)  
Figures 620–624; Map 10

*Epeira cyanospina* Lucas, 1835: 70, pl. 149, fig. 3, ♀.  
Female specimens from Java (an error), lost.  
*Micrathena cyanospina*:—Reimoser, 1917: 139.  
Roewer, 1942: 956. Bonnet, 1957: 2865.

*Description.* Female from Rio Branco, Brazil. Carapace dark orange; eye region orange without black pigment. Sternum, legs orange. Dorsum of abdomen black with transverse orange-white pigment patches (Fig. 621); long spines iridescent bluish; sides orange-white; venter with white patch behind epigynum, a black ring around the spinnerets and a white ring more distally around cone of spinnerets. Carapace with thoracic depression, low thorax, no dimples or rim (Figs. 620, 621). Total length, 10.0 mm. Carapace, 4.3 mm long, 3.8 mm wide. First femur, 5.8 mm; patella and tibia, 5.4 mm; meta-

tarsus, 3.5 mm; tarsus, 1.3 mm. Second patella and tibia, 4.9 mm; third, 3.1 mm. Fourth femur, 6.9 mm; patella and tibia, 5.8 mm; metatarsus, 3.6 mm; tarsus, 1.4 mm. Spines about 32 mm long.

*Variation.* Females vary in total length from 10.0 to 11.7 mm; length of third spine varies from 25 to 32 mm. Smaller sized individuals have relatively shorter spines than do larger ones. The epigynum in posterior view has the transverse swellings variable in size. One specimen had the light patches of the dorsum of the abdomen sclerotized.

*Note.* The male is unknown.

*Diagnosis.* The long third spine, twice to three times body length (Fig. 621), separates this species from others of the group.

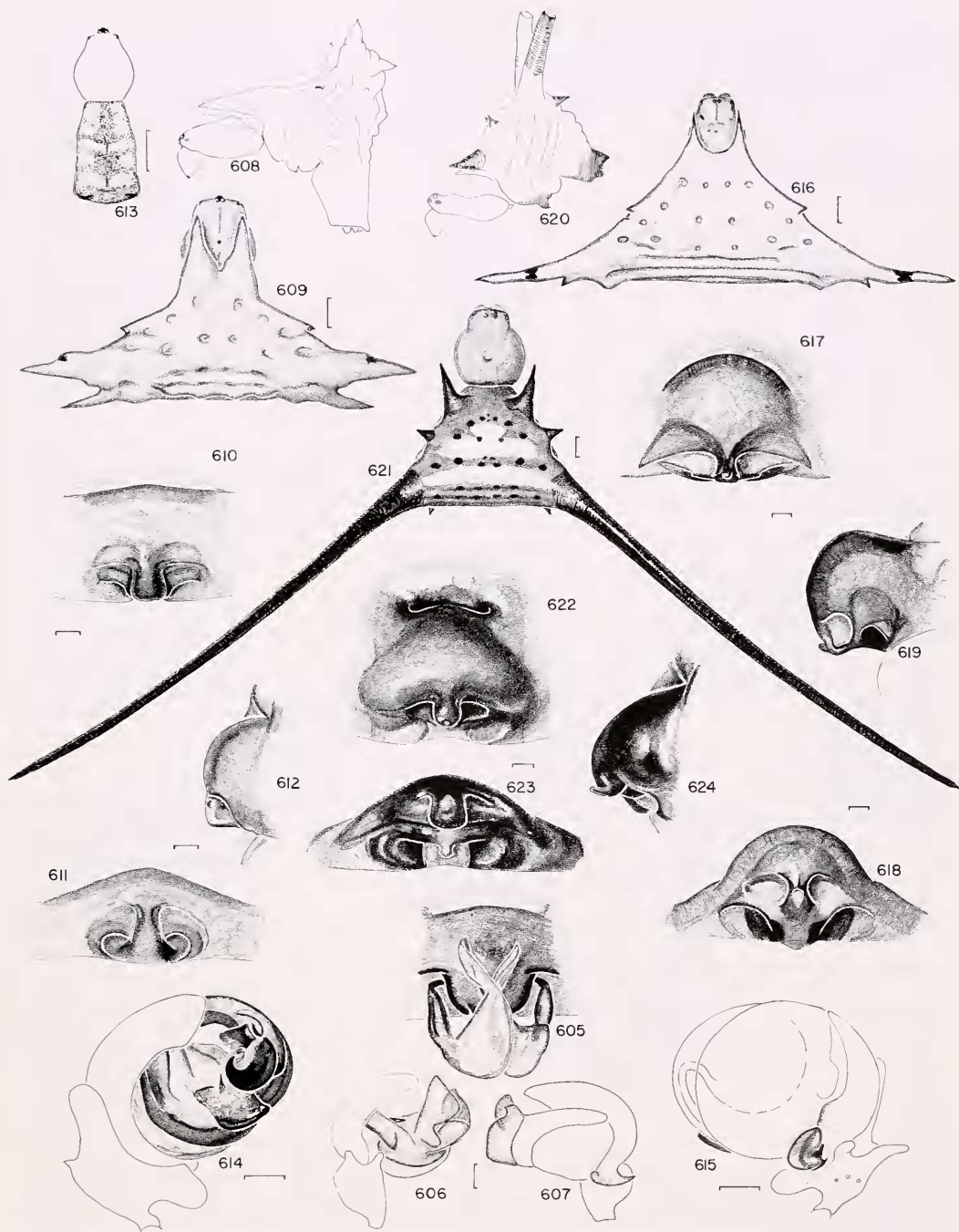
*Distribution.* Amazon region (Map 10).

*Records.* GUYANA: *Berbice Co.* Canje River, ♀ (G. Bentley, AMNH). *Essequibo.* ultimate source of Rewa [Illiwá Riv.], Oct. 1911, ♀ (J. O. Ogilvie, MCZ). COLOMBIA: *Dept. Meta.* Monte Redonado, 45 km W of Villavicencio, June 1947, imm. (L. Richter, AMNH); Villavicencio, July 1938, imm. (H. Dybas, AMNH), May 1945, ♀ (AMNH). *Boyacá.* Río Dpan, 850–950 m, imm. (AMNH). ECUADOR: *Prov. Napo.* Río Tarapuy at Aguas Negras, Nov. 1982, ♀ (L. Avilés, MCZ). *Pastaza.* Río Pastaza, ♀ (Olalla, AMNH). PERU: *Dept. Loreto.* Mishana, 2 Nov. 1974, ♀ (P. A. Holzbauer, MPM). BRAZIL: *Terr. Roraima.* Rio Branco, ♀ (NMW). *Est. Pará.* Belém, ♀ (H. H. Smith, MCZ); 45 km E of Canindé, ♀ (B. Malkin, AMNH); Canindé (several collections, AMNH); Rio Guamá, Aug. 1952, ♀ (IBSP); Conceição do Araguaia, Jan. 1983, ♀ (A. Harada, CNDC); Rio Gurupi, May 1963, ♀ (B. Malkin, MZSP);

Figures 605–607. *Micrathena militaris* (Fabricius). 605. Epigynum with male emboli and terminal apophyses. 606, 607. Mated male left palpus, embolus and terminal apophysis torn off. 606. Palpus, mesal. 607. Palpus, lateral.

Figures 608–615. *Micrathena lata* Chickering. 608–612. Female. 608. Lateral. 609. Dorsal. 610. Epigynum, ventral. 611. Epigynum, posterior. 612. Epigynum, lateral. 613–615. Male. 613. Dorsal. 614. Palpus, mesal. 615. Palpus, lateral.

Figures 616–619. *Micrathena reimoseri* Mello-Leitão, female. 616. Dorsal. 617. Epigynum, ventral. 618. Epigynum, posterior. 619. Epigynum, lateral.



Figures 620–624. *Micrathena cyanospina* (Lucas), female. 620. Lateral. 621. Dorsal. 622. Epigynum, ventral. 623. Epigynum, posterior. 624. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 608, 609, 613, 616, 620, 621, 1.0 mm.

Cachimbo, Nov. 1955, June 1965, 5♀, imm. (MZSP). *Amazonas*. Uaupés, March 1952, ♀ (J. Falco, IBSP); Rio Negro, Umarituba, 19 April 1924, ♀ (A. Roman, NRS).

*Micrathena furcata* (Hahn)

Figures 625–632; Map 10

*Epeira furcata* Hahn, 1822, pl. 4, fig. B, ♀. Specimen from Cayenne (locality probably an error).

*Acrosoma bifurcata* Hahn, 1834: 65, fig. 158, ♀. Female from Brazil, lost. C. L. Koch, 1839: 124, fig. 521, ♀.

*Plectana difissa* Walckenaer, 1841: 181. New name for *Acrosoma bifurcatum*—C. L. Koch, thought misidentified. NEW SYNONYMY.

?*Plectana flabellata* Walckenaer, 1841: 192. Female from South America. DOUBTFUL NEW SYNONYMY.

*Acrosoma gilvulum* C. L. Koch, 1845: 67, fig. 886, ♀. Female from Brazil in the collection of Prof. Reich, Berlin, lost. First synonymized with *difissa* by Reimoser, 1917.

*Micrathena difissa*:—Reimoser, 1917: 113, pl. 6, fig. 15, ♀. Roewer, 1942: 957. Bonnet, 1957: 2866.

*Micrathena bifurcata*:—Roewer, 1942: 954. Bonnet, 1957: 2862.

*Micrathena amplexa* Mello-Leitão, 1944a: 3: 332, figs. 17, 18, ♂. Male holotype with left palpus missing, right expanded, from Tigre, Buenos Aires Prov., Argentina (MULP), examined. NEW SYNONYMY.

*Synonymy.* In 1822 Hahn illustrated this species, which he called *Epeira furcata*. It appeared on the same plate as another species, *E. sexspinosa*; unfortunately, the figure legends were reversed, and the illustration of *furcata* labeled “*Epeira sexspinosa*.” In 1834 Hahn used the same illustration for *A. bifurcata*, referring in the text to the mislabeled figure 158 (“*A. 6-spinosa* in Tabula”). Thus, while the initial reversal remains uncorrected, the reader is made aware of it in the 1834

publication. C. L. Koch in 1835 published a better illustration and description because of the poor condition of Hahn’s specimen (C. L. Koch, 1839). Walckenaer considered Koch’s illustration a different species and gave it the name *difissa*. Hahn’s specimen of *Epeira furcata*, although pinned and shrivelled, was undoubtedly this species, as is C. L. Koch’s figure 521. The spines and the black bands on the carapace that were illustrated are diagnostic. Both Roewer and Bonnet list the name *M. bifurcata* (Hahn) and the name *furcata* as a synonym of *armata*. Mello-Leitão described the male as *M. amplexa*.

Walckenaer’s *M. flabellata* was 7.8 mm long, the abdomen elongate triangular, divided into two lobes posteriorly, each lobe with two spines; another pair of spines hangs over the carapace. It might be this species.

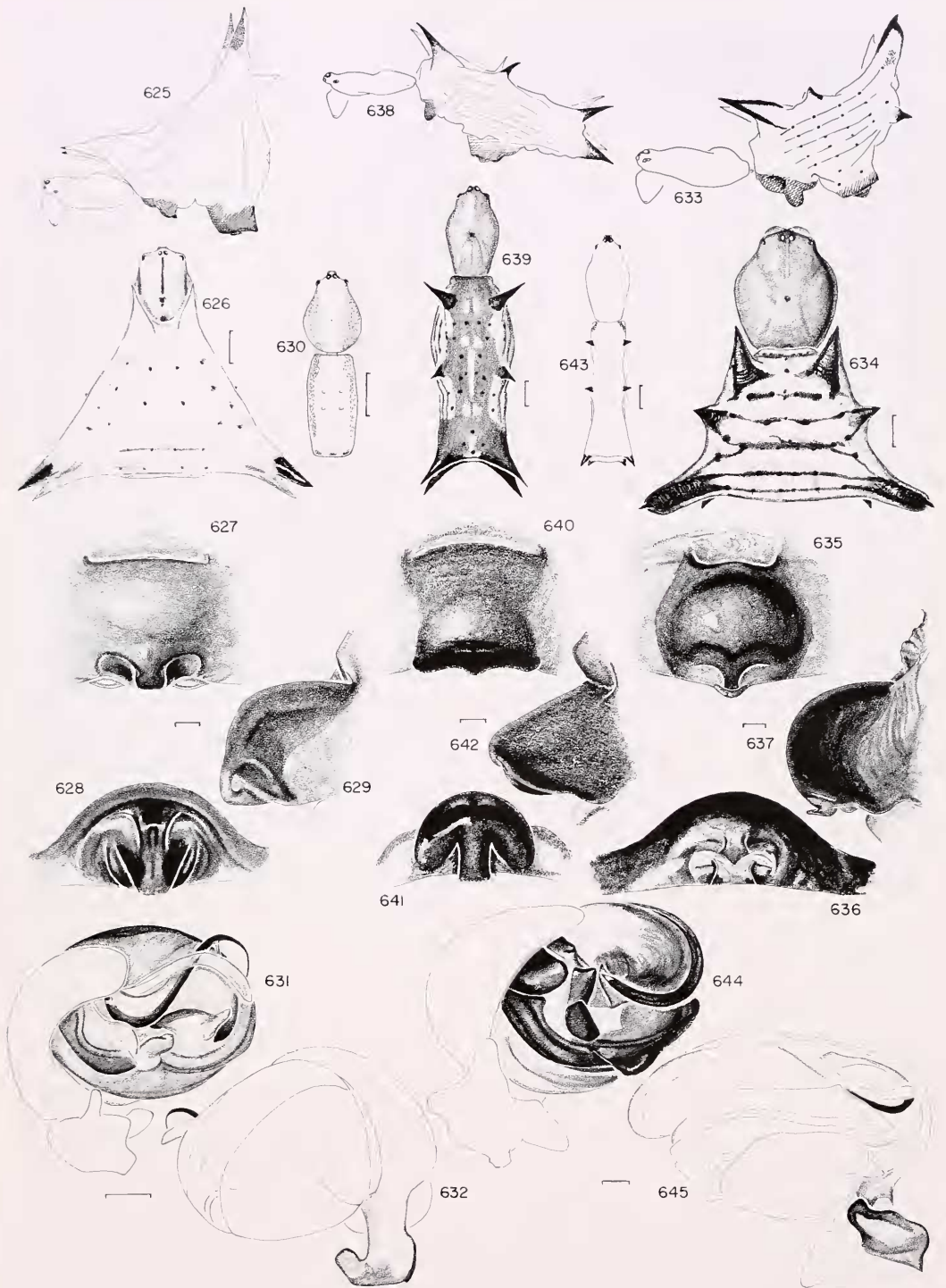
*Description.* Female. Carapace yellow with a median and two paraxial black lines. Sternum yellow. Legs yellow with a black line on the first, second and third femur ventrally. Dorsum of abdomen white with a posterolateral spine having a black patch on anterior face, white on posterior; venter black around spinnerets and with paired white patches. Carapace relatively low in thorax, with a thoracic depression; no rim or dimples. Abdomen triangular, width and length equal, with four pairs of spines: anterior pair overhanging carapace, a small tooth on each side, and two posterolaterally of almost equal length (Figs. 625, 626). Total length, 7.3 mm. Carapace, 3.0 mm long, 2.5 mm wide. First femur, 2.7 mm; patella and

Figures 625–632. *Micrathena furcata* (Hahn). 625–629. Female. 625. Lateral. 626. Dorsal. 627. Epigynum, ventral. 628. Epigynum, posterior. 629. Epigynum, lateral. 630–632. Male. 630. Dorsal. 631. Left palpus, mesal. 632. Palpus, lateral.

Figures 633–637. *Micrathena hamifera* Simon, female. 633. Lateral. 634. Dorsal. 635. Epigynum, ventral. 636. Epigynum, posterior. 637. Epigynum, lateral.

Figures 638–645. *Micrathena swainsoni* (Perty). 638–642. Female. 638. Lateral. 639. Dorsal. 640. Epigynum, ventral. 641. Epigynum, posterior. 642. Epigynum, lateral. 643–645. Male. 643. Dorsal. 644. Palpus, mesal. 645. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 625, 626, 630, 633, 634, 638, 639, 643, 1.0 mm.



tibia, 2.7 mm; metatarsus, 1.7 mm; tarsus, 0.8 mm. Second patella and tibia, 2.5 mm; third, 1.6 mm. Fourth femur, 3.3 mm; patella and tibia, 2.7 mm; metatarsus, 1.9 mm; tarsus, 0.9 mm.

Male. Carapace with light brown band from eye region to posterior margin, narrow behind. Sternum yellow-brown. Legs orange-brown with posterior and anterior longitudinal black stripes. Dorsum of abdomen yellow-brown with a gray band on each side extending almost to posterior end; sides black; venter whitish brown except for black ring around spinnerets and dark brown book-lung covers. Abdomen rectangular, twice as long as wide (Fig. 630). Total length, 4.7 mm. Carapace, 2.1 mm long, 1.5 mm wide. First femur, 1.4 mm; patella and tibia, 1.5 mm; metatarsus, 1.0 mm; tarsus, 0.7 mm. Second patella and tibia, 1.4 mm; third, 0.7 mm. Fourth femur, 1.5 mm; patella and tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 6.1 to 8.0 mm, males from 3.7 to 4.7 mm. The larger specimens from Argentina may lack the black line on the femora.

*Note.* Males and females are rarely collected together, but both are the only representatives of the *militaris* group in southern Brazil and Argentina. In the MNHN is a male from Teresópolis, with ten females of *M. furcata*.

*Diagnosis.* *Micrathena furcata* females can be separated from other species of this group by the color markings: longitudinal dark marks on the carapace (Fig. 626), and the longitudinal black marks on the femora. Dark females can be separated by the subequal length of third and fourth spines (Figs. 625, 626).

The long, S-shaped embolus of the male is diagnostic (Fig. 631).

*Distribution.* Southeastern Brazil to Argentina (Map 10).

*Records.* BRAZIL: *Est. Espírito Santo*. Chaves, Santa Leopoldina, ♀ (MZSP); Castelo, ♂ (AMNH). *Rio de Janeiro*. Rio de Janeiro, ♀ (ZMB); Teresópolis, 10♀, ♂

(MNHN). *São Paulo*. Itapeva, 2♀ (MCZ); Jundiá, ♀, 3♂ (MCZ, MZSP); São Paulo, 2 ♀ (IBSP); Ipiranga, 11♀ (BMNH); Serra de Bocaina, ♀ (MZSP); Osascu, ♀ (MZSP); Alto da Serra, ♀ (MZSP); Guaianazes, ♀ (MZSP); Barueri, 2♀ (MZSP); Mogi das Cruzes, ♀ (MZSP); Boracéia, imm. (MZSP); Guarulhos, ♀ (MZSP); Serra da Bocaina, ♀ (MZSP). *Paraná*. Guarapuava (Rio Coutinho), ♀ (MZSP); 65 km NE Curitiba, 2♀ (CAS); Curitiba, 5♀ (MZSP); Araucária, 10♀ (MZSP). *Santa Catarina*. Pinhal, 4♀ (EPC); Município de Monte Castelo, ♀ (MZSP). *Rio Grande do Sul*. Montenegro, 2♂ (FZRS); Tres Coroas, ♂ (FZRS); Vacaria, 19♀, 2♂ (FZRS); Triunfo, ♀, 2♂ (FZRS); Torres, ♂ (FZRS); Camaguã, ♀ (MZSP). URUGUAY: ♀ (BMNH). *Dept. Canelones*. Santa Lucía, 7♀ (IIBM). *Lavalleja*. Sección 11a, ♀ (IIBM). *San José*. Barra de Santa Lucía, imm. (IIBM). ARGENTINA: *Prov. Misiones*. Monteagudo, imm. (MACN). *Corrientes*. Esquina, ♀ (ZMK); Ibéra, 6♀ (MULP). *Entre Ríos*. Las Talas, 18♀ (MULP); Concordia, ♀ (MNRJ); San José, ♀ (MACN). *Chaco*. Manantiales, 15♀ (MULP). *Santa Fé*. Santa Fé, ♂ (MACN); Garay, 7♀ (MACN). *Tucumán*. Lules, 2♀ (IMLT); Mercedes, Famailla, 9♀ (IMLT); El Manantial, ♀ (IMLT). *Buenos Aires*. Tigre, ♀ (CUC, MACN, MULP); Buenos Aires, 5♀ (MNHN, MACN); Punta Lara, 3♀ (MULP); Paraná de los Palmas y Canal, 9♀, ♂ (MEG, MACN); Las Florida, ♀ (MACN); Delta del Paraná, 16♀ (MACN); Glew, 2♀ (MACN); Río Santiago Palo Blanco, 7♀ (MACN); Río Santiago, 7♀ (MULP); La Plata, 2♀ (MULP).

*Micrathena hamifera* Simon  
Figures 633–637; Map 10

*Micrathena hamifera* Simon, 1897b: 466. Nine female syntypes from Moyobamba [San Martín], Peru (no. 10519, MNHN), examined. Reimoser, 1917: 144. Roewer, 1942: 959. Bonnet, 1957: 2870.

*Description.* Female. Carapace, sternum, legs dark brown. Dorsum of abdomen with white areas, dark brown to black spines, and sclerites dark brownish black; venter whitish with dark brown sclerites, epigastric region and ring around spin-

nerets. Carapace low with narrow rim and circular thoracic depression. Abdomen trapezoidal, with eight spines; two large overhanging carapace, a smaller one on each side, a pair of heavy large spines, and two posterior (Figs. 633, 634). Total length, 9.0 mm. Carapace, 3.5 mm long, 3.0 mm wide. First femur, 2.9 mm; patella and tibia, 3.1 mm; metatarsus, 1.8 mm; tarsus, 0.8 mm. Second patella and tibia, 2.9 mm; third, 1.7 mm. Fourth femur, 3.7 mm; patella and tibia, 3.0 mm; metatarsus, 1.9 mm; tarsus, 0.9 mm.

*Variation.* Females vary in total length from 8.4 to 9.5 mm.

*Note.* The male is not known.

*Diagnosis.* Females are separated from others having a similar epigynum by the heavy spines of the abdomen and the relatively large carapace (Figs. 633, 634).

*Distribution.* Amazon region (Map 10).

*Records.* FRENCH GUIANA: Cayenne, imm. (K. Jelski, PAN); St. Laurent de Maroni, imm. (K. Jelski, PAN). ECUADOR: *Prov. Napo.* Coca, Napo River, May 1965 (L. Peña, MCZ); Archidona, April 1935, ♀ (Y. Mexia, CAS). *Morona-Santiago.* nr. General Plaza, 1977–1978 (N. Engler, MCZ). PERU: *Dept. San Martín.* 30 km SE of Moyobamba, June 1947, ♀, 30 km NE Moyobamba, Aug. 1947, ♀ (F. Woytkowski, AMNH). *Ucayali.* Boquerón, Aug. 1946, ♀ (F. Woytkowski, AMNH). *Huánuco.* Tingo María, 8 Oct. 1946, 2♀ (J. C. Pallister, AMNH), 15, 28 Oct., 23 Nov. 1954, 3♀ (E. I. Schlinger, E. S. Ross, CAS). BRAZIL: *Terr. Amapá.* 4 Aug. 1961, ♀ (A. Cordeiro, FZRS).

### *Micrathena swainsoni* (Perty)

Figures 638–645; Map 10

*Acrosoma swainsonii* Perty, 1833: 194, pl. 38, fig. 10, ♀. Female specimen from Piauí State, Brazil (ZSM), destroyed in the last war. C. L. Koch, 1839: 121, fig. 519.

*Micrathena prudens* Simon, 1895: 860. Two female, one male syntypes from Asunción, Paraguay (no. 1446, MNHN), examined.

*Micrathena swainsoni*.—Reimoser, 1917: 99, pl. 3, fig. 6, ♀. Roewer, 1942: 964. Bonnet, 1957: 2880. Chickering, 1960c: 87, figs. 83–90, ♀, ♂.

*Micrathena paraguayensis* Mello-Leitão, 1931: 95. Female holotype from Paraguay (MNBA), not examined. Synonymized by Mello-Leitão, 1932.

*Micrathena silvicola* Badcock, 1932: 27, fig. 19, ♀, ♂. Female, male syntypes from Makthlawaiya, Paraguay (BMNH), examined. Synonymized by Chickering, 1960c.

*Description.* Female from Paraguay. Carapace, sternum, legs brown. Dorsum of abdomen black and white, with spines black; sides black with some white spots; venter black with paired white spots on sides. Eye region of carapace projecting above clypeus, with rim only seen from side and with a round thoracic mark (Figs. 638, 639). Abdomen longer than wide, with eight spines (Figs. 638, 639). Total length, 11.0 mm. Carapace, 3.6 mm long, 2.0 mm wide. First femur, 2.9 mm; patella and tibia, 3.2 mm; metatarsus, 2.0 mm; tarsus, 0.9 mm. Second patella and tibia, 2.8 mm; third, 1.9 mm. Fourth femur, 4.1 mm; patella and tibia, 3.0 mm; metatarsus, 2.4 mm; tarsus, 1.0 mm.

Male. Carapace orange-brown, sternum orange with some gray. Legs orange-brown with distal articles much darker. Dorsum of abdomen orange with black spines and a white spot on each anterolateral corner; sides and venter gray. Carapace oval, elongate, without rims or dimples, and with tiny teeth on the edge; thoracic depression indistinct and eyes overhanging as in female. No coxal hook. Abdomen with four pairs of spines (Fig. 643). Total length, 8.4 mm. Carapace, 3.4 mm long, 1.7 mm wide. First femur, 2.7 mm; patella and tibia, 3.0 mm; metatarsus, 2.3 mm; tarsus, 0.9 mm. Second patella and tibia, 2.7 mm; third, 1.9 mm. Fourth femur, 3.4 mm; patella and tibia, 3.1 mm; metatarsus, 2.4 mm; tarsus, 0.9 mm.

*Variation.* Females vary in total length from 7.3 to 11.0 mm, males from 7.7 to 9.1 mm.

*Note.* Males are often collected with females and have an abdomen resembling that of females.

*Diagnosis.* Unlike all other *Micrathena*, the abdomen is rectangular, two to

three times as long as wide, with eight black spines in both sexes (Figs. 639, 643). The epigynum has a transverse bulge, dark near its edge (Figs. 640–642). The palpus has a large curved embolus curled around the top of the bulb (Fig. 644).

*Natural History.* Badcock (1932) reports the species from woods; one collection from near Piraçununga, Est. São Paulo is from scrub, collected with a similar sized and colored ant. It also has been collected stored in wasp nests.

*Distribution.* Southern Brazil to Argentina (Map 10).

*Records.* BRAZIL: *Est. São Paulo.* Itapeva, 4 imm. (MCZ); Piraçununga, ♂ (MCZ, MZSP); Americana, imm. (MZSP); Rio Claro, ♀ (MZSP); Sorocaba, ♀ (MZSP); Mirassol, ♀ (MZSP); Cajuru, ♀ (MZSP); Nova Europa, ♀ (MZSP); Tabatinga, ♀ (MZSP); Miraestrela. PARAGUAY: *Dept. Alto Paraná.* Taguararapa, 5♀, 3♂ (AMNH). *La Cordillera.* San Bernardino, 4♀ (MCZ); Piribebuy, ♀ (JAK). *Paraguarí.* Sapucaí, ♀ (MACN). *Concepción.* Territ. Focnière, 26♀, 4♂, 3 imm. (NMW). *Ambay.* P.N. Cerro Corá, ♀, ♂ (JAK). ARGENTINA: *Prov. Misiones.* Posadas, 2♀ (CUC); Iguazú, ♂ (MACN); Santa Marta, imm. (MACN); Pindapoy, imm. (MULP). *Corrientes.* Manantiales, 2♀, imm. (IMLY, MACN); Maracuyá, 2♀ (MULP); Ibéra, ♀, 4 imm. (MULP). *Formosa.* Guayculé, 2♀ (MACN). *Chaco.* Resistencia, 2♀ (MULP); Tirol, imm. (MULP); Río de Oro, 2♀, imm. (MACN). *Santa Fé.* Caraguatay, imm. (MULP). *Salta.* El Tabacal, 3♀ (MACN); Las Víboras, ♀ (IMLT). *Tucumán.* Tucumán, 1 imm. (MCZ). *Buenos Aires.* Punta Lara, 4♀ (MULP).

### *The spinosa Group*

The *spinosa* group is characterized by the female having a posteriorly biforked abdomen with two to three pairs of dorsal spines (Figs. 646, 647, 683, 684). If two pairs are present in the adult, the missing middle pair is usually replaced by scars (Fig. 647). There are no spines overhanging the carapace or on the underside of

the abdomen. The females of all species are similar to each other. The epigynum is a bulge with an anterior pair of grooves or pockets in many species; the openings are posterior (Figs. 677–679). The carapace has an indistinct transverse groove behind the head and, seen in dorsal view, a rim and a distinct thoracic depression (Figs. 654, 655). The sternum is sculptured (Fig. 726). All species have the carapace, sternum and distal articles of legs dark; the coxae are often lighter than the sternum. The abdomen has paired light yellow-white patches on the dorsum, small ones on the venter [except in *M. coca*, which has two or three large light patches on black on the underside (Fig. 725)]. The forks of the abdomen are orange to black, the spines black.

Males have a trapezoidal abdomen, widest behind, in some cases with straight sides (*coca*, Fig. 709; *sexspinosa*, Fig. 717) with spines (*donaldi*, Fig. 688), or bulging (*anchicaya*, Fig. 759; *spinosa*, Fig. 701). The carapace of males is glossy, widest usually in the anterior half, with a distinct round thoracic depression. All lack a hook on the first coxa and the corresponding groove on the second femur. The palpus has a straight to slightly curved embolus with a large terminal apophysis, a median apophysis bearing a characteristic finger (Figs. 673, 681), and a complex conductor which does not hold the embolus. The palpal tibia is ventrally modified with a distal ridge (Figs. 652, 681) (which separates this species group from the *gracilis* group). In most species the embolus and terminal apophysis break off when mating and plug the epigynal opening (Figs. 727–730), making a second mating more difficult for females and impossible for males. Sometimes, however, there are two sets of palpal parts on the same side in *M. sexspinosa*. Since males lacking embolus and terminal apophysis were not among collections, it is assumed that males do not survive mating. While Figures 729–730 show the terminal apophysis and embolus as found in epigyna, only a part of the



terminal apophysis appears to break off in *M. coca* (Fig. 729) and *M. donaldi* (Fig. 727). The "wing" protruding from the epigynal opening of *M. donaldi* is near the base of the embolus, in the palpus, hidden by the cymbium in Figure 689.

Because of similarities in the epigynum, the shape of the carapace, the extended palpal tibia, and the lack of stridulating structure on book-lungs, this group is close to the *M. militaris* group and might be considered a subgroup comprising similar species.

Diagnostic features for females are the sculpturing of the epigynum as seen in ventral, posterior and lateral views, and the thickness and length of the abdominal forks and spines. The shape of the embolus and terminal apophysis stuck in the epigynum is diagnostic (Figs. 727-730). Males can be separated by the shape of the paracymbium (Fig. 719), the terminal apophysis and conductor of the palpus (Fig. 731). Males are much easier to determine than females. Juvenile (? females) of all species have six dorsal spines (Figs. 720, 721), adults except *M. donaldi* only four; the last spine may be as large in early instars as the forks of the abdomen.

There is the possibility that *M. anchicaya* is a subspecies of *M. sexspinoso*, and *M. coca* a subspecies of *M. spinosa*. The few males in collections make a decision difficult.

KEY TO THE *SPINOSA* GROUP

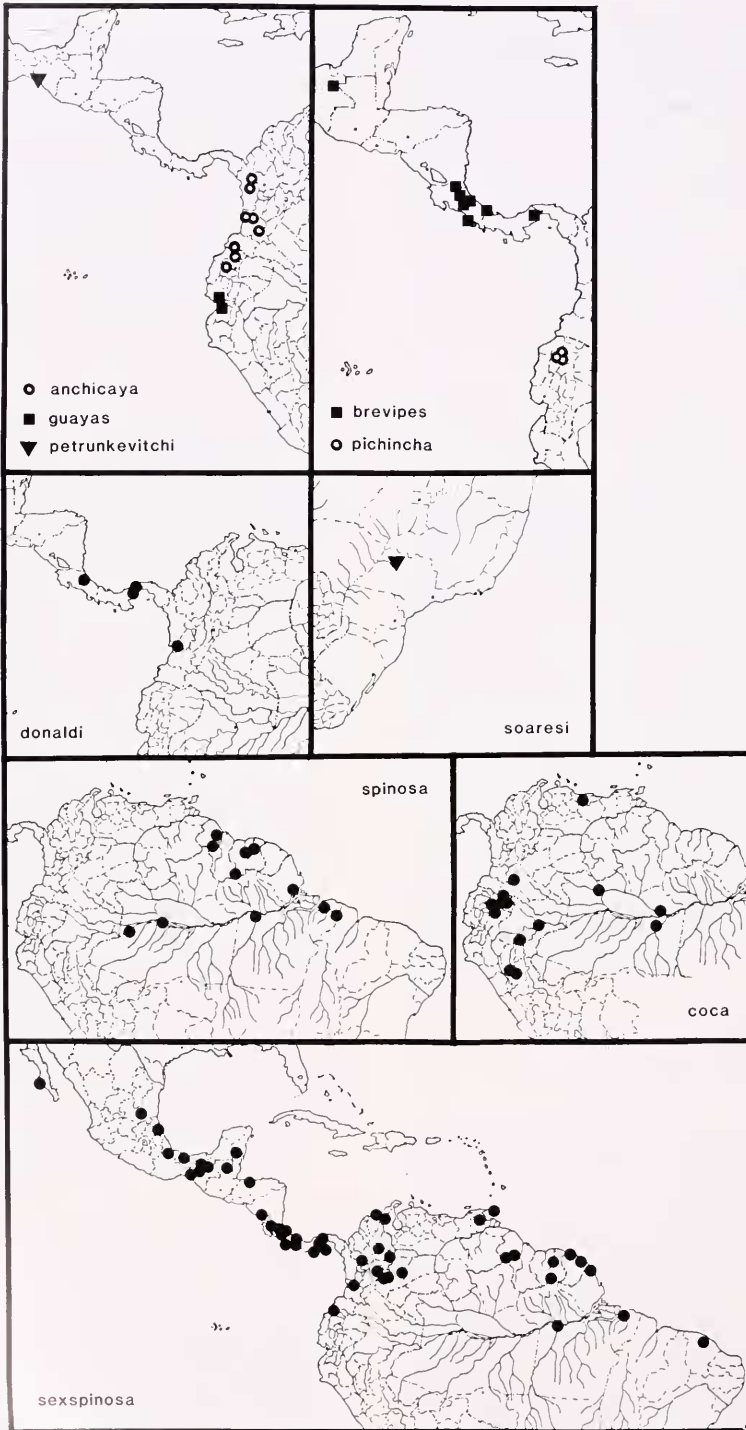
Females

- 1. Epigynum in ventral view with a pair of pockets or grooves on the anterior slope of bulge (Figs. 677, 685) ..... 5
- Epigynum in ventral view with anterior slope of bulge smooth or bulge reduced (Figs. 648, 656, 664, 714) ..... 2
- 2(1) Median posterior lobe of epigynum reduced (Figs. 664, 666); Chiapas, Map 11 ..... *petrunkevitchi*
- Median posterior lobe of epigynum present (Figs. 648, 656) ..... 3
- 3(2) In profile median lobe with a hole (Fig. 716) or groove (Fig. 658) ..... 4
- In profile median lobe lacking hole or

- groove (Fig. 650); western Ecuador, Map 11 ..... *guayas*
- 4(3) Median lobe wider than long in ventral view, wider than lateral depressions (Fig. 656); abdomen forks short and stubby (Fig. 655); western Colombia, Ecuador, Map 11 ..... *anchicaya*
- Median lobe as wide as long in ventral view and as wide as lateral depressions (Fig. 714); abdomen forks moderately long (Fig. 713); Mexico to Ecuador and north-eastern Brazil, Map 11 ..... *sexspinoso*
- 5(1) Epigynum with median septum in posterior view (Fig. 686); abdomen with 6 spines (Figs. 683, 684); Costa Rica to Colombia, Map 11 ..... *donaldi*
- Epigynum with a transverse swelling in posterior view (Figs. 670, 678, 694, 699, 707); abdomen usually with only four spines in adult or, if six spines, the second pair is small (Figs. 667, 675, 697) ..... 6
- 6(5) Abdomen forks as long as abdomen without them (Fig. 676); first pair of spines much longer than second (Fig. 675); epigynum as in Figs. 677-679; Chiapas to Panama, Map 11 ..... *brevipes*
- Abdomen forks shorter (Fig. 705); spines of two pairs subequal in size (Fig. 704); epigynum otherwise ..... 7
- 7(6) Venter of abdomen with two or three large light patches (Fig. 725); epigynum as in Figs. 706-708; Venezuela and Amazon area, Map 11 ..... *coca*
- Venter with only small light patches; epigynum otherwise (Figs. 722, 724) ..... 8
- 8(7) Epigynum with a small median lobe flanked by grooves on each side and a transverse swelling behind (Fig. 669); north-central Ecuador, Map 11 ..... *pichincha*
- Epigynum with a large median lobe (Figs. 693, 698) ..... 9
- 9(8) Median lobe as wide as length of grooves on each side (Fig. 698); in posterior view a pair of depressions dorsally (Fig. 699); Guianas, Brazilian Amazon, Map 11 ..... *spinosa*
- Median lobe narrower than length of grooves on each side (Fig. 693); in posterior view only slits present (Fig. 694); southeastern Brazil, Map 11 ..... *soaresi*

Males

- The males of *M. petrunkevitchi* and *M. soaresi* are unknown.
- 1. Ventral and dorsal lobes of paracymbium subequal in size (Figs. 674, 682) ..... 2
  - Ventral lobe (left in Figs. 653, 661, 731) smaller than dorsal lobe of paracymbium (Figs. 653, 661, 690, 731) ..... 3
  - 2(1) Tip of terminal apophysis bird-head-shaped



Map 11. Distribution of *Micrathena* species of the *spinosa* group.

- (Fig. 681); terminal apophysis and conductor extending beyond the tegulum (Fig. 681); Chiapas to Panama, Map 11 ..... *brevipes*
- Tip of terminal apophysis not sclerotized; terminal apophysis and conductor framed by tegulum (Fig. 673); north-central Ecuador, Map 11 ..... *pichincha*
- 3(1) Abdomen with indistinct spines (Fig. 688); dorsal lobe of paracymbium a hook (Fig. 690); finger of median apophysis recurved (Fig. 689); Costa Rica to Colombia, Map 11 ..... *donaldi*
- Abdomen without spines (Figs. 651, 659, 701); paracymbium and median apophysis otherwise ..... 4
- 4(3) Length of paracymbium equals height of bulb (Figs. 711, 719) ..... 5
- Length of paracymbium much shorter, about equal to half height of bulb (Figs. 653, 661, 703) ..... 6
- 5(4) Paracymbium flat (Fig. 711); Venezuela and Amazon area, Map 11 ..... *coca*
- Paracymbium tubular (Fig. 719); Mexico to Ecuador and northeastern Brazil, Map 11 ..... *sexspinosa*
- 6(4) Paracymbium with a dorsal lobe (right in Figs. 653, 703) ..... 7
- Paracymbium without dorsal lobe (Fig. 661); western Colombia, Ecuador, Map 11 ..... *anchicaya*
- 7(6) Dorsal lobe of paracymbium about as long as curved tip (Fig. 653); western Ecuador, Map 11 ..... *guayas*
- Dorsal lobe of paracymbium longer than curved tip (Fig. 703); Guianas, Brazilian Amazon, Map 11 ..... *spinosa*

***Micrathena guayas* new species**  
**Figures 646–653; Map 11**

*Holotype.* Female from Guayaquil, Guayas, Ecuador, 4 March 1983 (R. G. Schuster, CAS). The specimen is named after the Ecuadorian Province as a noun in apposition.

*Description.* Female. Head, thorax dark brown, sides between head and thorax lighter orange (Fig. 647). Sternum dark brown, orange posteriorly. Coxae light orange, distal leg articles orange. Posterior median eyes 1.3 diameters of other eyes. Anterior median eyes slightly more than their diameter apart; posterior median eyes 1.5 diameters apart. Two posterior forks of the abdomen short and stout (Fig. 647). Total length, 8.5 mm. Carapace, 3.2 mm long, 2.4 mm wide. First femur, 3.0 mm; patella and tibia, 3.0 mm; metatar-

sus, 2.0 mm; tarsus, 1.3 mm. Second patella and tibia, 2.7 mm; third, 1.7 mm. Fourth femur, 4.2 mm; patella and tibia, 3.2 mm; metatarsus, 2.4 mm; tarsus, 1.1 mm.

Male. Carapace shiny brown, sternum orange to brown, patchy. Legs brown. Dorsum of abdomen brown with three white spots, margin orange. Venter with black pigment. Abdomen trapezoid with sides wavy (Fig. 651). Total length, 5.8 mm. Carapace, 2.2 mm long, 1.4 mm wide. First femur, 1.4 mm; patella and tibia, 1.7 mm; metatarsus, 0.9 mm; tarsus, 0.6 mm. Second patella and tibia, 1.4 mm; third, 0.8 mm. Fourth femur, 2.1 mm; patella and tibia, 1.7 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm.

*Note.* The male which might belong with the female comes from "Palma—Peru/Ecuador" [probably Palmales, Prov. El Oro, Ecuador].

*Diagnosis.* Like *M. anchicaya*, this species has very short abdominal forks (Fig. 647). Females differ in having the posterior median lobe of the epigynum quite flat and indistinct (Fig. 648); in posterior view the sides overhang the short, light median septum (Fig. 649).

The male differs from *M. spinosa* by having a narrower terminal apophysis (Fig. 652), and the paracymbium with a dorsal lobe and hook (Fig. 653).

*Distribution.* Western Ecuador (Map 11).

*Paratypes.* ECUADOR: *Prov. El Oro.* Palmales, ♂ (K. Jelski, J. Sztolcman, PAN).

***Micrathena anchicaya* new species**  
**Figures 654–661; Map 11**

*Holotype.* Female from Río Anchicayá, 400 m, Dept. Valle, Colombia (W. Eberhard, MCZ). The specific name is a noun in apposition after the type locality.

*Description.* Female. Carapace dark brown, head black, sides of thorax lightest. Abdomen with both posterior forks short (Fig. 655). Total length, 7.6 mm. Carapace, 3.0 mm long, 2.2 mm wide. First femur, 2.9 mm; patella and tibia, 2.9

mm; metatarsus, 1.9 mm; tarsus, 0.9 mm. Second patella and tibia, 2.7 mm; third, 1.7 mm. Fourth femur, 3.6 mm; patella and tibia, 3.3 mm; metatarsus, 2.1 mm; tarsus, 0.9 mm.

Male. Carapace dark brown. Legs, sternum orange. Dorsum of abdomen brown with lateral black spots and median white patches (Fig. 659). Venter gray, sclerotized areas brown. Carapace with an oval median thoracic depression. Abdomen trapezoidal (Fig. 659). Total length, 3.9 mm. Carapace, 1.7 mm long, 1.1 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm. Second patella and tibia, 1.1 mm; third, 0.6 mm. Fourth femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 7.5 to 8.5 mm, males from 3.9 to 4.2 mm.

*Notes.* Males and females were matched because of finding two males within the distribution range of females, and one from the type locality. The epigyna do not contain broken palpal pieces.

*Diagnosis.* Females of *M. anchicaya* differ from *M. sexspinosa* by having shorter posterior forks of the abdomen (Fig. 655), by being smaller in size and by having a wider median bulge of the epigynum (Fig. 656). Males differ by having the paracymbium curved (Fig. 661) and the knob of the paracymbium toward the bulb on a stalk (not shown in illustration).

*Distribution.* Western Colombia, Ecuador (Map 11).

*Paratypes.* COLOMBIA: *Dept. Antioquia.* Río Atrato Valley, 1,000 m, 18 March 1958, 5♀ (W. Weyrauch, EPC). *Choco.* Río Atrato Valley nr. Quibdo, 18 Jan. 1958, 3♀ (W. Weyrauch, IMLT). *Valle.* Anchicaya, 400 m, 1978, 2♀, 1977, 2♂ (W. Eberhard,

MCZ); Lago Calima, 1,300 m, April 1976, ♀ (W. Eberhard, MCZ); Queremal, 12 Feb. 1976, ♂ (W. Eberhard, MCZ); Queremal to Buenaventura, 17 Feb. 1935, ♀ (H. F. Schwarz, AMNH); 28 km E of Buenaventura, 20 Jan. 1970, ♀, July 1973, ♀ (W. Eberhard, MCZ); near Puerto Patina, 10–13 July 1981, ♀ (B. Opell, MCZ); Río Jumundi, 1,000 m, ♀ (W. Eberhard, MCZ). *Cauca.* Silvia, Aug. 1975, ♀ (W. Eberhard, MCZ). *Nariño.* Barbacoas, 20 m el., 20 March 1974, 2♀ (W. Eberhard, MCZ). EC-UADOR: *Pichincha Prov.* 10 km W Santo Domingo, 23 Feb. 1955, ♀ (E. I. Schlinger, E. S. Ross, CAS). *Imbabura.* Hacienda Paramba [0°49'N:78°21'W], May 1898, 3♀ (Rosenberg, BMNH).

*Micrathena petrunkevitchi* new species  
Figures 662–666; Map 11

*Holotype.* Female and one female paratype from Tonalá, Chiapas, Mexico, August 1909 (A. Petrunkevitch, AMNH). The species is named after its collector, the well known arachnologist.

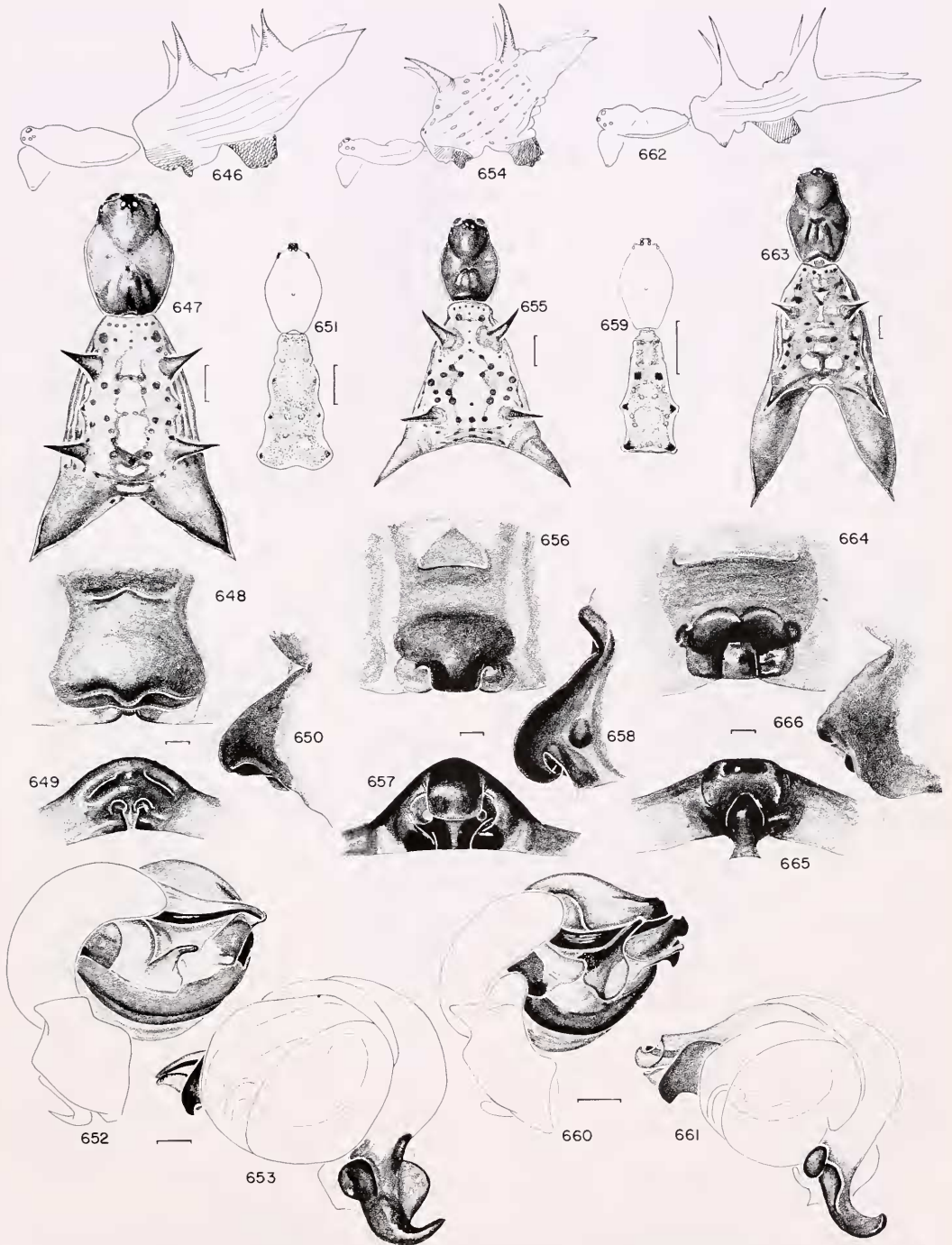
*Description.* Female. Carapace blackish brown with orange rim. Sternum blackish brown. Coxae and legs brown. Carapace with a median and transverse groove and several posterior longitudinal grooves. Abdomen forks swollen (Fig. 663). Total length, 10.0 mm. Carapace, 4.3 mm long, 3.0 mm wide. First femur, 4.4 mm; patella and tibia, 4.2 mm; metatarsus, 3.0 mm; tarsus, 1.2 mm. Second patella and tibia, 3.9 mm; third, 2.3 mm. Fourth femur, 5.7 mm; patella and tibia, 4.6 mm; metatarsus, 3.3 mm; tarsus, 1.2 mm.

*Note.* Both females are in poor condition as a result of having been kept in a cork-stoppered vial for seventy years. Petrunkevitch considered the specimens to be *M. obtusispinosa*.

*Diagnosis.* The epigynum distinguishes

Figures 646–653. *Micrathena guayas* n. sp. 646–650. Female. 646. Lateral. 647. Dorsal. 648. Epigynum, ventral. 649. Epigynum, posterior. 650. Epigynum, lateral. 651–653. Male. 651. Dorsal. 652. Left palpus, mesal. 653. Palpus, lateral.

Figures 654–661. *Micrathena anchicaya* n. sp. 654–658. Female. 654. Lateral. 655. Dorsal. 656. Epigynum, ventral. 657. Epigynum, posterior. 658. Epigynum, lateral. 659–661. Male. 659. Dorsal. 660. Palpus, mesal. 661. Palpus, lateral.



Figures 662–666. *Micrathena petrunkevitchi* n. sp., female. 662. Lateral. 663. Dorsal. 664. Epigynum, ventral. 665. Epigynum, posterior. 666. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 646, 647, 651, 654, 655, 659, 662, 663, 1.0 mm.

this species from all others of the *M. sexspinosa* group. It lacks pockets on the anterior slope of the bulge and lacks the median lobe of the bulge overhanging the posterior (Figs. 664–666). The openings are probably in the slits to the side of the posterior plate.

*Micrathena pichincha* new species  
Figures 667–674, 722; Map 11

*Holotype*. Female, and one female and one male paratype from 20 km northeast of Alluriquín, 4,000 m, 27 June 1975, Pichincha Prov., Ecuador (S. and J. Peck, MCZ). The specific name is a noun in apposition after the name of the province of the type locality.

*Description*. Female. Abdomen very contrastingly marked, black and white with many smaller sized light spots on venter. Forks of abdomen short and thick (Fig. 668); first pair of spines longer than the second (Fig. 667). Total length, 10.7 mm. Carapace, 3.9 mm long, 3.1 mm wide. First femur, 3.5 mm; patella and tibia, 3.5 mm; metatarsus, 2.0 mm; tarsus, 1.1 mm. Second patella and tibia, 3.2 mm; third, 2.1 mm. Fourth femur, 4.6 mm; patella and tibia 3.6 mm; metatarsus, 2.6 mm; tarsus, 1.1 mm.

Male with trapezoidal abdomen and three pairs of humps, second pair large (Fig. 672). Total length, 6.0 mm. Carapace, 2.5 mm long, 1.6 mm wide. First femur, 1.6 mm; patella and tibia, 1.7 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.6 mm; third, 1.0 mm. Fourth femur, 2.1 mm; patella and tibia, 1.9 mm; metatarsus, 1.0 mm; tarsus, 0.6 mm.

*Variation*. Females vary in total length from 9.4 to 11.0 mm, males from 5.4 to 6.0 mm. One female had six spines in addition to the two forks of the abdomen.

*Note*. Males and females have been collected together.

*Diagnosis*. The female can be separated from others by the long grooves or pockets anteriorly on the epigynum, on each side of a relatively small median lobe (Fig. 669). The openings are quite far dorsal (close to the body wall) and have only a dorsal lip (Fig. 670). The male can be distinguished from other species by the ventral knob of the paracymbium being larger than the dorsal hook (Fig. 674).

*Distribution*. North-central Ecuador (Map 11).

*Paratypes*. ECUADOR: *Pichincha Prov.* Santo Domingo, 7 Aug. 1969, 7♀, 2♂, 6 imm. (P., B. Wygodzinsky, AMNH); 16 km SE of Santo Domingo, 680 m, June 1975, 3♂ (S., J. Peck, MCZ); 47 km S Santo Domingo, June 1975, 2♀ (S., J. Peck, MCZ); 2.9 km SW Tandayapa, 1,820 m, 20 Feb. 1979, ♂ (L. Burnham, MCZ); Río Pilatón, ♀ (G. W. Prescott, MCZ); Tandapi, 1,300–1,500 m, 1965, 23♀ (L. Peña, MCZ); Quito to Santo Domingo, June 1963, 20♀ (L. Peña, MCZ); Lluriquia, 104 km from Quito, 750 m, 21 April 1958, 3♀ (W. Weyrauch, EPC); km 113, vía Pto. Quito, 19 May 1984, ♀ (L. Avilés, MECN).

*Micrathena brevipes* (O. P.-Cambridge)  
Figures 675–682, 723; Map 11

*Acrosoma brevipes* O. P.-Cambridge, 1890: 62, pl. 8, fig. 10, ♂. Two male syntypes from Bugaba, Panama (BMNH), examined. Keyserling, 1892: 12, pl. 1, fig. 9, ♂.

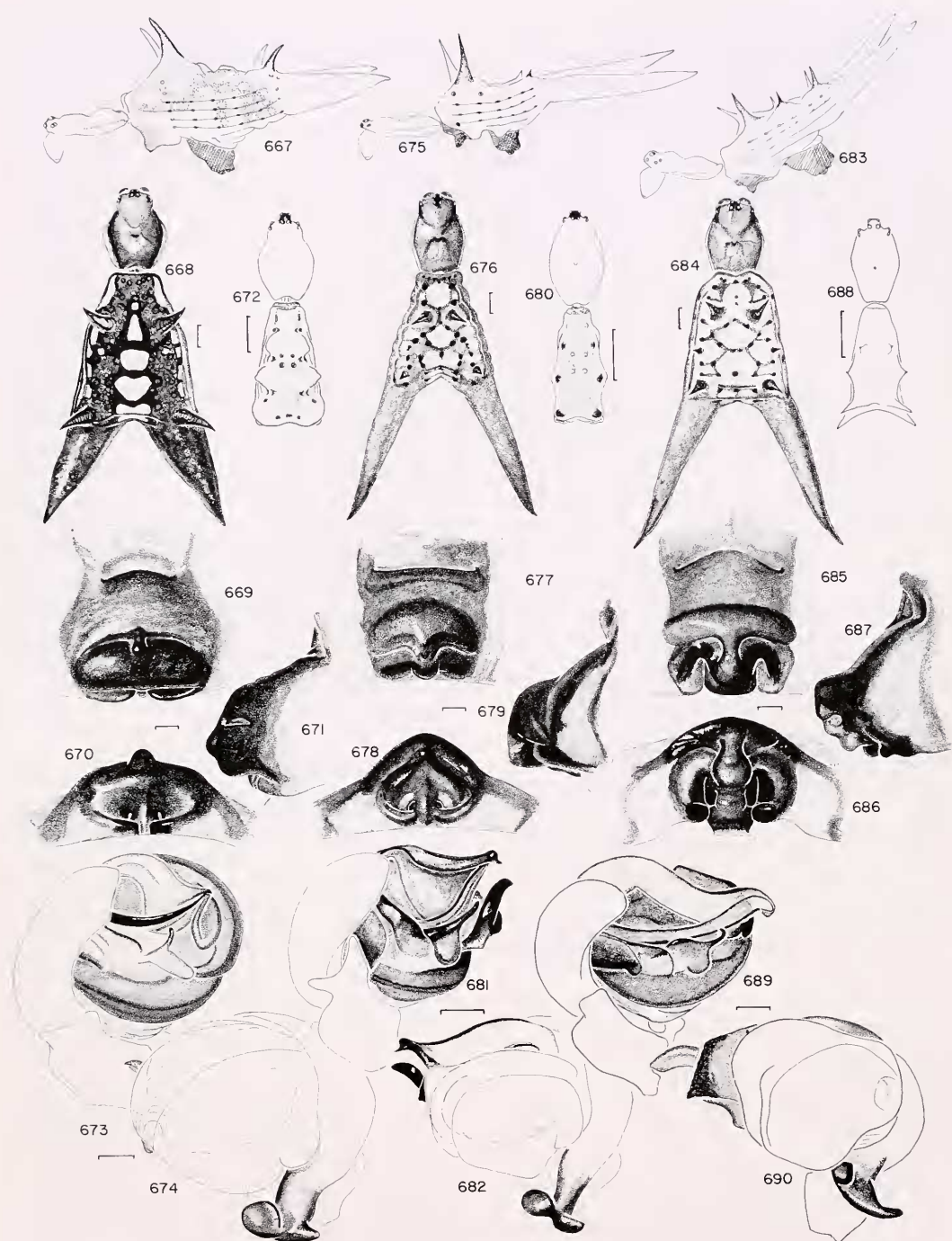
?*Acrosoma sedes* Gétaz, 1893: 105. Female from Palmares, plain of Diquís [9°N, 84°W], Costa Rica, lost. NEW SYNONYMY.

*Micrathena brevipes*:—F. P.-Cambridge, 1904: 531, pl. 50, fig. 8, ♂. Roewer, 1942: 955. Bonnet, 1957: 2862. Chickering, 1961: 398, figs. 6–8, ♂.

*Synonymy*. *Acrosoma sedes* may be this species or *M. sexspinosa*. In the L. Koch

Figures 667–674. *Micrathena pichincha* n. sp. 667–671. Female. 667. Lateral. 668. Dorsal. 669. Epigynum, ventral. 670. Epigynum, posterior. 671. Epigynum, lateral. 672–674. Male. 672. Dorsal. 673. Left palpus, mesal. 674. Palpus, lateral.

Figures 675–682. *Micrathena brevipes* (O. P.-Cambridge). 675–679. Female. 675. Lateral. 676. Dorsal. 677. Epigynum, ventral. 678. Epigynum, posterior. 679. Epigynum, lateral. 680–682. Male. 680. Dorsal. 681. Palpus, mesal. 682. Palpus, lateral.



Figures 683–690. *Micrathena donaldi* Chickering. 683–687. Female. 683. Lateral. 684. Dorsal. 685. Epigynum, ventral. 686. Epigynum, posterior. 687. Epigynum, lateral. 688–690. Male. 688. Dorsal. 689. Palpus, mesal. 690. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 667, 668, 672, 675, 676, 680, 683, 684, 688, 1.0 mm.

collection (BMNH) is a specimen of *M. brevipes* labeled as *M. armata*.

*Description.* Female from Costa Rica. Forks of abdomen long and slender (Fig. 676); anterior spines large; tiny scars in the middle on each side, and a tooth posteriorly on each side (Fig. 675). Total length, 8.6 mm. Carapace, 3.5 mm long, 2.7 mm wide. First femur, 3.5 mm; patella and tibia, 3.4 mm; metatarsus, 2.2 mm; tarsus, 1.1 mm. Second patella and tibia, 3.3 mm; third, 2.0 mm. Fourth femur, 4.7 mm; patella and tibia, 4.0 mm; metatarsus, 2.7 mm; tarsus, 1.2 mm.

Male from La Selva, Puerto Viejo, Costa Rica. Carapace shiny dark brown. Sternum orange with white pigment at anterior and posterior ends. Legs orange with dusky longitudinal lines dorsally. Dorsum of abdomen brown with paired black patches. Abdomen slightly narrower anteriorly than posteriorly, sides almost parallel and slightly lobed (Fig. 680). Total length, 4.0 mm. Carapace, 1.8 mm long, 1.1 mm wide. First femur, 0.9 mm; patella and tibia, 1.2 mm; metatarsus, 0.6 mm; tarsus, 0.5 mm. Second patella and tibia, 1.0 mm; third, 0.7 mm. Fourth femur, 1.3 mm; patella and tibia, 1.2 mm; metatarsus, 0.8 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 7.9 to 9.9 mm, males from 4.0 to 4.3 mm.

*Note.* Males and females have been collected together.

*Diagnosis.* The female is distinguished from *M. sexspinosa* by having longer, more slender abdominal forks (Fig. 676); in posterior view the epigynum lacks a septum, unlike *M. sexspinosa* and *M. donaldi*. Instead it has a transverse swollen ridge with the openings dorsal, close to the body wall (Fig. 678), as in *M. pichincha*.

The male differs from *M. sexspinosa* and *M. donaldi* by having the two parts of the paracymbium equal in size (Fig. 682); while the dorsal part is longer in the two other species. The male differs from *M. pichincha*, which has a similar para-

cymbium, by having a longer embolus and terminal apophysis (Figs. 681, 682).

*Natural History.* Females have been found in webs in low vegetation in dense jungle and forest.

*Distribution.* Southern Mexico to northern Panama (Map 11).

*Records.* MEXICO: *Est. Chiapas.* Palenque ruins area, 2–11 July 1983, ♀ (W. Maddison, R. S. Anderson, MCZ). COSTA RICA: *Heredia Prov.* Puerto Viejo, La Selva, ♀, ♂ (many collections, MCZ). *Alajuela.* San Carlos, 25 March 1980, ♀ (MZCR). *Limón.* Siquirres, 20–23 May 1944, ♀ (F. Schrader, AMNH); Waldeck Farm, 4 Aug. 1930, 3♀, ♂ (E. Reimoser, NMW). *San José.* San José, ♀ (N. Banks, MCZ); Braulio Carillo Natl. Park, 26 July 1983, 3♀ (H. and L. Levi, W. Eberhard, MCZ), 25 Oct. 1981, 2♀ (A. Coto, MZCR); San Francisco de Dos Ríos, 10 March 1981, ♀ (C. Gomez, MZCR). *Puntarenas.* Isla Caño, 19 Feb. 1970, 2♀ (D. C. Robinson, MZCR). PANAMA: ♀ (BMNH). *Prov. Panamá.* Alturas Cerro Campana, Dist. Capira, 9 April 1977, 2♀ (A. Arauz, D. Quintero, UPMI).

*Micrathena donaldi* Chickering  
Figures 683–690, 727; Map 11

*Micrathena donaldi* Chickering, 1961: 405, figs. 31–34, ♂. Male holotype from Barro Colorado Island, Gatún Lake, Panama (MCZ), examined.

*Description.* Female. Abdomen with three pairs of dorsal spines, median one smallest, and long, slender fork (Figs. 683, 684). Total length, 9.4 mm. Carapace, 3.7 mm long, 3.0 mm wide. First femur, 4.2 mm; patella and tibia, 4.2 mm; metatarsus, 2.7 mm; tarsus, 1.2 mm. Second patella and tibia, 3.7 mm; third, 2.3 mm. Fourth femur, 5.5 mm; patella and tibia, 4.5 mm; metatarsus, 3.0 mm; tarsus, 1.2 mm.

Male. Carapace very smooth with a median circular thoracic mark. Abdomen with four large posterior spines and four small dorsal ones (Fig. 688). Total length, 4.2 mm. Carapace, 1.8 mm long, 1.1 mm



wide. First femur, 1.3 mm; patella and tibia, 1.3 mm; metatarsus, 0.7 mm; tarsus, 0.6 mm. Second patella and tibia, 1.2 mm; third, 0.8 mm. Fourth femur, 1.9 mm; patella and tibia, 1.6 mm; metatarsus, 1.1 mm; tarsus, 0.6 mm.

*Variation.* Females vary in total length from 8.2 to 10.3 mm, males from 4.2 to 4.6 mm.

*Note.* Males and females are common on Barro Colorado Island, Gatún Lake, Panama.

*Diagnosis.* Females can be separated from those of *M. sexspinosa* by the more slender forks of the abdomen (Fig. 684) and by having three pairs of dorsal spines (Fig. 683), and by the epigynum having a pair of pockets on the anterior face on each side of the bulge (Fig. 685). They differ from females of *M. brevipes* in having a longitudinal septum in posterior view of the epigynum (Fig. 686). The parts of the male palpus broken off after mating extend from the epigynal openings like insect wings and are diagnostic (Fig. 727).

Males can be separated from *M. sexspinosa* by having a much shorter paracymbium (Fig. 690) and a slender, curved embolus (Fig. 689). Males differ from *M. brevipes* by having a longer dorsal part to the paracymbium (Fig. 690).

*Distribution.* Costa Rica to western Colombia (Map 11).

*Records.* COSTA RICA: *Prov. Limón.* Waldeck Farm, 4 Aug. 1930, ♀ (E. Reimoser, NMW). PANAMA: *Prov. Panamá.* Barro Colorado Island, Gatún Lake, ♀♀, ♂♂ (common, AMNH, EPC, MCZ); Capira, 11 Nov. 1979, ♀ (J. Regalado, UPMI). COLOMBIA: *Dept. Valle.* 28 km E of Buenaventura, ♀ (W. Eberhard, MCZ).

#### *Micrathena soaresi* new species

Figures 691–695, 724; Map 11

*Holotype.* Female from Mirassol, Est. São Paulo, Brazil, 10 June 1964 (no. 3464, MZSP). The species is named after B. M. Soares, Brazilian arachnologist.

*Description.* Female. Carapace orange-brown, rim whitish. Sternum dark brown;

coxae, legs orange-brown. Posterior median eyes slightly larger than anterior; anterior laterals equal; posterior laterals slightly smaller than anterior median eyes. Abdomen forked with four spines and a pair of scars in between; forks short (Figs. 691, 692). Total length, 8.9 mm. Carapace, 3.5 mm long, 2.4 mm wide. First femur, 3.2 mm; patella and tibia, 3.4 mm; metatarsus, 2.2 mm; tarsus, 1.1 mm. Second patella and tibia, 3.0 mm; third, 1.9 mm. Fourth femur, 4.3 mm; patella and tibia, 3.6 mm; metatarsus, 2.6 mm; tarsus, 1.1 mm.

*Diagnosis.* This species differs from *M. spinosa* and *M. pichincha* by having a flat area in posterior view of the epigynum (Fig. 694); the openings are tucked in slits dorsally and not visible in posterior view.

#### *Micrathena spinosa* (Linnaeus)

Figures 696–703, 720, 728; Map 11

*Araneae spinosa* Linnaeus, 1758: 624. Specimen from America (not *spinosa* of most authors). Neotype here designated from Santarém, Brazil (BMNH).

*Aranea aculeata* Fabricius, 1775: 345. Specimen from America (BMNH), lost. NEW SYNONYMY.

*Aranea elongatospinosa* De Geer, 1778: 323, pl. 39, figs. 11, 12, juv. or ♀. Specimen from Suriname, lost. NEW SYNONYMY.

*Micrathena perlata* Simon, 1895: 852, fig. 905; 1897b: 467. Juvenile female lectotype here designated from São Paulo de Olivença [Est. Amazonas, Brazil] (no. 244, MNHN). Male paralectotype is *M. triangularispinosa*. NEW SYNONYMY.

*Micrathena hamata* Chickering, 1960a: 3, figs. 4–7, ♂. Male holotype and one paratype from Le Para [Belém], Brazil (MCZ), examined. NEW SYNONYMY.

*Synonymy.* Linnaeus supplied no figure, only a short diagnosis: "Aranea spinis dorsalis octonis, posticis duabus patentibus, abdomina subtus conico. Habitat in America." De Geer (1778) subsequently renamed it *triangularispinosa* and supplied a figure resembling Figure 472, of a spider having only six dorsal spines and two small ones posterior and below. DeGeer's figure does not fit Linnaeus' description of eight dorsal spines, the posterior two most distinct. After examining the many species of *Micrathena*, I find

that Linnaeus' description fits only immature females of the common *sexspinosa* group (Figs. 720, 721). It is much more likely that Linnaeus had specimens from the Amazon and northeastern South America than from Central American or western South America. There are two species of this group found in the Amazon and northeastern South America, one which has usually been referred to as *sexspinosa* (Chickering, 1961). Since using Linnaeus' name for *sexspinosa* would upset the stability of a name, an arbitrary decision has been made to use it for this species whose oldest certain name was *hamata* Chickering.

The synonymy of *A. aculeata* Fabricius and of *A. elongatospinosa* DeGeer is uncertain. Both belong to the *A. sexspinosa* group and are most likely this species. *Micrathena perlata* has two specimens in the same vial: a juvenile female, described by Simon, and an adult male. The juvenile has been designated lectotype and is probably this species. The male is *M. triangularispinosa*.

**Description.** Female. Abdomen bifurked, with two pairs of spines, first pair slightly longer than second (Figs. 696, 697). Total length, 10.0 mm. Carapace, 4.2 mm long, 3.1 mm wide. First femur, 4.2 mm; patella and tibia, 4.3 mm; metatarsus, 2.8 mm; tarsus, 1.2 mm. Second patella and tibia, 4.0 mm; third, 2.6 mm. Fourth femur, 5.4 mm; patella and tibia, 4.6 mm; metatarsus, 3.2 mm; tarsus, 1.2 mm.

Male. Abdomen trapezoidal, sides undulating (Fig. 701). Total length, 4.5 mm. Carapace, 1.9 mm long, 1.1 mm wide.

First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm. Second patella and tibia, 1.0 mm; third, 0.7 mm. Fourth femur, 1.4 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm.

**Variation.** Females vary in total length from 8.8 to 11.5 mm, males from 4.5 to 4.7 mm.

**Note.** A male is with a collection of females from Kartabo, Guyana (CUC), from Vila Amazonas, Brazil (CAS) and from Belém (MEG). Palpal parts remaining in the epigynum are illustrated in Figure 728.

**Diagnosis.** Females of *M. spinosa* can be distinguished from the sympatric *M. sexspinosa* by having a pair of pockets on the bulge of the epigynum in ventral view (Fig. 698); in posterior view by having the deep opening close to the ventral body wall (Fig. 699); and by lacking the septum of *M. sexspinosa*.

The male can be separated by the distal hook of the relatively flat paracymbium (Fig. 703); that of *M. sexspinosa* is long and tubular.

**Distribution.** Guianas and Amazon region of Brazil (Map 11).

**Records.** GUYANA: ♀ (R. W. G. Hings-ton, BMNH); Kartabo, many collections, ♀♀, ♂♂ (CUC, AMNH); source of Kutari River, 1936, ♀ (BMNH); Moraballi Riv., Essequibo Riv., 24 km above Bartica, ♀ (BMNH). SURINAME: *Brokopondo Prov.* Browns Berg, 20 Feb. 1982, ♀ (D. Smith Trail, MCZ). *Suriname*. Republiek, June 1963 (P. H. van Doesburg, AMNH). BRAZIL: *Terr. Amapá*. Villa Amazonas, 29 May 1964, 2♀, ♂ (C. E., E. S. Ross, CAS); Macapá, June 1966, ♀ (IBSP). *Est. Pará*. Santarém, 8♀ (BMNH); Belém, ♀, ♂ (MCZ).

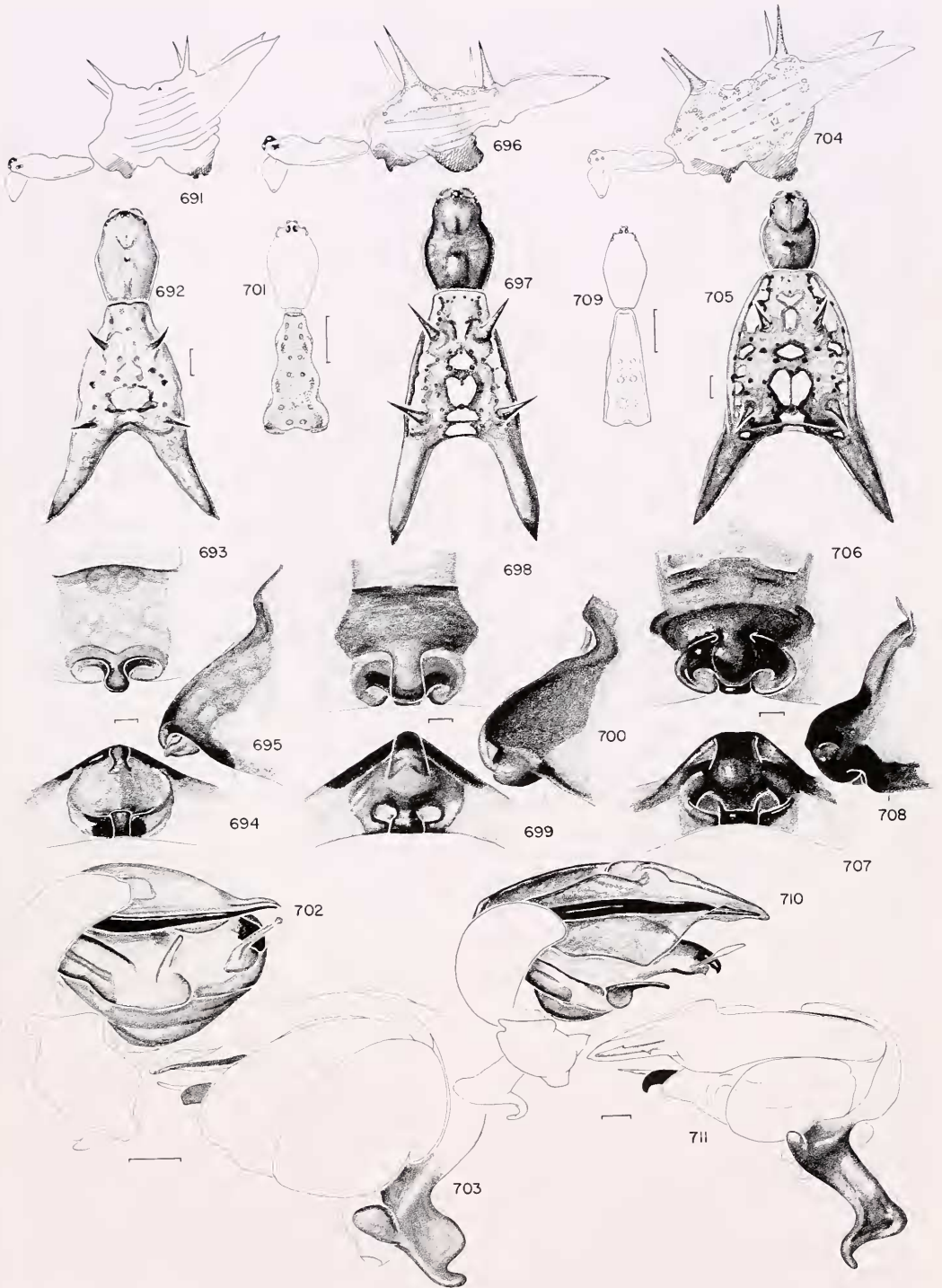
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Figures 691–695. *Micrathena soaresi* n. sp., female. 691. Lateral. 692. Dorsal. 693. Epigynum, ventral. 694. Epigynum, posterior. 695. Epigynum, lateral.

Figures 696–703. *Micrathena spinosa* (Linnaeus). 696–700. Female. 696. Lateral. 697. Dorsal. 698. Epigynum, ventral. 699. Epigynum, posterior. 700. Epigynum, lateral. 701–703. Male. 701. Dorsal. 702. Left palpus, mesal. 703. Palpus, lateral.

Figures 704–711. *Micrathena coca* n. sp. 704–708. Female. 704. Lateral. 705. Dorsal. 706. Epigynum, ventral. 707. Epigynum, posterior. 708. Epigynum, lateral. 709–711. Male. 709. Dorsal. 710. Palpus, mesal. 711. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 691, 692, 696, 697, 701, 704, 705, 709, 1.0 mm.



Aug. 1971, 2♀, ♂ (M. E. Galiano, MEG), Nov. 1961, ♀ (A. R. Hoge, IBSP); Canindé, Rio Gurupi, Feb.-May 1964, ♀ (J. Carvalho, AMNH). *Amazonas*. Tefé, Nov.-Dec. 1920, 3♀ (H. S. Parish, MCZ).

*Micrathena coca* new species

Figures 704-711, 725, 729; Map 11

*Holotype*. Female from Coca, Napo River, Prov. Napo, Ecuador, May 1965 (L. Peña, MCZ). The specific name is a noun in apposition after the type locality.

*Description*. Female. Venter of abdomen with three large white patches on black (Fig. 725). Posterior spines of abdomen as long as anterior spines (Fig. 704). Total length, 11.0 mm. Carapace, 3.9 mm long, 2.9 mm wide. First femur, 4.0 mm; patella and tibia, 3.8 mm; metatarsus, 2.5 mm; tarsus, 1.2 mm. Second patella and tibia, 3.6 mm; third, 2.2 mm. Fourth femur, 5.0 mm; patella and tibia, 4.1 mm; metatarsus, 2.7 mm; tarsus, 1.2 mm.

Male from Tingo María, Peru. Carapace brownish black, very shiny. Sternum dark brown underlain by some white pigment. Legs dark brown, first two femora darkest. Dorsum of abdomen with three white patches on brownish black; venter black. Abdomen longer than wide, narrow in front and with a posterior median notch (Fig. 709). Total length, 4.7 mm. Carapace, 2.0 mm long, 1.2 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.6 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.6 mm. Fourth femur, 1.3 mm; patella and tibia, 1.2 mm; metatarsus, 0.7 mm; tarsus, 0.5 mm.

*Variation*. Females vary in total length from 10.9 to 11.6 mm. The white patch behind the spinnerets may be absent. In posterior view the shape of the median septum of the epigynum close to the body wall is quite variable, sometimes narrower, sometimes with the dorsal piece pointed.

*Note*. Males have been collected with females in Manaus, Brazil.

*Diagnosis*. Females of *M. coca* differ

from *M. spinosa* by the pair of white patches on the underside of the abdomen (Fig. 725) and by the wider septum in posterior view of the epigynum (Fig. 707). The paracymbium of the male palpus is longer and the distal end curved in the opposite direction from that of *M. spinosa* (Fig. 711).

*Natural History*. Females from Limoncocha were collected in Amazonian rainforest.

*Distribution*. Upper Amazon area (Map 11).

*Paratypes*. VENEZUELA: *Prov. Aragua*. Rancho Grande, Feb. 1968, ♀ (Williner, MACN). COLOMBIA: *Dept. Coclé*. Río Orteguzaza, Aug.-Sept. 1947, 2♀ (L. Richter, AMNH). ECUADOR: *Dept. Napo*. Pompeya, Río Napo, May 1965, 2♀ (L. Peña, MCZ); Limoncocha, 240 m, 6 Feb. 1979, 2♀ (L. Burnham, MCZ). *Napo*. Tarapuy, Nov. 1982, ♀, 25 May 1984, ♀ (L. Avilés, MECN); Archidona, 21 Aug. 1964, ♀ (D. Seiwa, AMNH); Dureno, S of Río Aguarico, 150-200 m, Sept. 1977, ♀ (L. Peña, AMNH). *Pastaza*. Sarayacu, ♀ (O. C. Felton, MCZ). PERU: *Dept. Huánuco*. Aucayacu, 1 June 1967, ♀ (A. F. Archer, AMNH); Tingo María, 31 May 1967, ♂ (A. F. Archer, AMNH), Dec. 1946, 5♀ (W. Weyrauch, AMNH); Cucharas, 1954, 11♀ (F. W. Woytkowski, EPC). *Loreto*. Iquitos, May 1920, 4♀ (H. S. Parish, MCZ); Río Pacaya, 1912, 3♀ (BMNH). BRAZIL: *Est. Amazonas*. Jan. 1884, ♀ (NMW); São Gabriel, 4 Jan. 1924, ♀ (A. Roman, NRS); Rio Autas, Capiranga, 31 Aug. 1914, ♀ (A. Roman, NRS); Manaus, Aug. 1971, 2♀, ♂ (M. E. Galiano, MEG).

*Micrathena sexspinosa* (Hahn)

Plate 1; Figures 712-719, 721, 726, 730, 731; Map 11

*Epeira sexspinosa* Hahn, 1822: pl. 4, figs. A and a (labeled *Epeira furcata* mihi). Specimen from Suriname in Hahn's collection, lost.

*Acrosoma sexspinorum*:—Hahn, 1834: 18, fig. 107, ♀ (illustration labeled *A. furcata*). Specimen from Brazil in Sturm's collection, lost.

*Plectana squamosa* Walckenaer, 1841: 185. Specimens without locality, lost.

*Acrosoma obtusospinum* Keyserling, 1863: 76, pl. 2, fig. 9, ♀. Two female, two juvenile syntypes from St. Andrés [San Andres, Veracruz], Mexico (BMNH), examined.

*Acrosoma petersii* Taczanowski, 1872: 277, pl. 6, fig. 28. Juvenile female lectotype here designated, three juvenile paralectotypes, two last instar males from St. Laurent de Moroni, French Guiana and Uassa [Amapá, Brazil] (PAN), examined. NEW SYNONYMY.

*Keyserlingia cornigera* O. P.-Cambridge, 1890: 58, pl. 4, fig. 2, ♂. Male holotype from Bugaba, Panama (BMNH), examined. Synonymized by Chickering, 1960.

*Acrosoma calcaratum* O. P.-Cambridge, 1890: 62, pl. 8, fig. 8, ♂. Male holotype from Bugaba, Panama (BMNH), examined. Keyserling, 1892: 11, pl. 1, fig. 8, ♂.

*Micrathena obtusospina*.—F. P.-Cambridge, 1904: 531, pl. 50, fig. 9, ♀.

*Micrathena cornigera*.—F. P.-Cambridge, 1904: 532, pl. 50, fig. 10, ♂.

*Micrathena sexspinosa*.—Reimoser, 1917: 126, pl. 8, fig. 23, ♀. Roewer, 1942: 963. Bonnet, 1957: 2877. Chickering, 1961: 456, figs. 174–180, ♀, ♂.

**Synonymy.** In 1822 Hahn inverted pictures and names of *Epeira furcata* and *Epeira sexspinosa*, and again in 1834 with *Acrosoma bifurcata* and *A. sexspinosa*. In 1834 Hahn under the text heading *A. bifurcata* has “*A. 6-spinosa*, in *Tabula*” in brackets. Reimoser (1917) does not mention Hahn’s confusion and illustrated (fig. 23) the species he, Chickering and I consider *sexspinosa*. Bonnet (1957: 2862) mentions the inversion in a footnote.

I follow here previous revisers (Reimoser, 1917; Chickering, 1961) in considering *obtusospina* a synonym of *sexspinosa*, although Hahn’s figure could be *M. spinosa* (Linn.).

Some synonyms, names based on juvenile types, are to some extent arbitrary: *petersii* from French Guiana could be *spinosa*. *Keyserlingia cornigera* and *Acrosoma calcaratum* are males of this species.

The name *sexspinosa* has been used in the literature for females of all members of this species group.

**Description.** Female from Panama. Abdomen with two pairs of slender dorsal spines; rarely a smaller spine in between (Figs. 712, 713). Total length, 11.0 mm. Carapace, 3.8 mm long, 2.7 mm wide.

First femur, 4.0 mm; patella and tibia, 3.7 mm; metatarsus, 2.5 mm; tarsus, 1.2 mm. Second patella and tibia, 3.5 mm; third, 2.2 mm. Fourth femur, 5.3 mm; patella and tibia, 4.0 mm; metatarsus, 3.1 mm; tarsus, 1.2 mm.

Male from Panama. Abdomen trapezoidal, with two posterolateral lobes (Fig. 717). Total length, 5.2 mm. Carapace, 2.1 mm long, 1.9 mm wide. First femur, 1.4 mm; patella and tibia, 1.3 mm; metatarsus, 0.7 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.8 mm. Fourth femur, 1.6 mm; patella and tibia, 1.3 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

**Variation.** Females vary in total length from 7.7 to 11.8 mm, males from 4.5 to 5.2 mm. Both spines and forks are extremely variable and often resemble in each region the spination of the endemic species of this group.

**Note.** Males and females were first associated by Chickering (1961) and have been collected together in Mexico, Panama and Colombia. The terminal apophysis and embolus of the male palpus (Fig. 731) match the structure found in the female epigynum (Fig. 730).

**Diagnosis.** Females can be differentiated from other members of this species group by the lack of grooves on the anterior of the epigynal bulge (Fig. 714), by the equal diameter of the median lobe and the lateral depressions (Fig. 714), and by the median septum in posterior view (Fig. 715). The unique long, tubular paracymbium, a spur (Figs. 718, 719, 731), separates the males from all other *Micrathena* species.

**Natural History.** Females have been collected from “pine forest” (Chiapas), “forest trail” (Colombia) and “low vegetation in primary forest” (Costa Rica). The orange eggs are in a pale yellow egg-sac.

**Distribution.** Mexico to Colombia and Ceará, Brazil (Map 11).

**Records.** MEXICO: *Est. Baja California*. Isla Sta. Magarita, ♀ (MCZ). *San Luis Potosí*. Ciudad de Maiz, 2♀. *Veracruz*.

Poza Rica, ♀; Fortín, ♀. *Tabasco*. 2.4 km E of Teapa, ♀. *Quintana Roo*. Kohunlich ruins, 9 km S Francisco Villa, ♀. *Chiapas*. 24 km NW of Arriaga, ♀; Cerro de Madrigal, ♀, ♂; Palenque ruins, ♀, ♂; Simojovel, ♂. GUATEMALA: *El Petén*. Tikal, 3♀. HONDURAS: Lancetilla, ♀. NICARAGUA: nr. Managua, 4♀. COSTA RICA: *Prov. Heredia*. Tiribí; Puerto Viejo, 2♀. *Alajuela*. La Fortuna. *Guanacaste*. Tilarán, 3♀. *Limón*. Bomba, nr. Limón; Siquirres, 2♀; Cohuita; Waldeck Farm, ♀; Hamburg Farm, 8♀, 2♂. *Cartago*. Turrialba. *San José*. Surubres. *Puntarenas*. Golfito; Rincón de Osa, ♀; 52 km E of Palmar Sur, ♀. PANAMA: *Prov. Panamá*. common. *Boca del Toro*. Río Changuinola, nr. Quebrada El Guabo, 16 km W of Almirante. *Los Santos*. Corozal. *Coclé*. El Valle. *Chiriquí*. El Volcán, Chiriquí; David. LESSER ANTILLES: *Trinidad*. Maracas Valley, ♀; SW Navy Base, ♀, ♂; Port of Spain, ♀; Blanchisseuse, ♀; Sangre Grande, ♀. VENEZUELA: *Est. Monagas*. Caripito, ♀. GUYANA: *Bartica Distr.* Kartabo, ♀. Upper Ireng River, Pakaraima Mts., 3♀. SURINAME: Makambi Kabelstation, ♀; Brownsberg. FRENCH GUIANA: Cayenne, ♀, ♂. COLOMBIA: *Dept. Cesar*. Finca San José, Socorpa Mission, Sierra de Perija, 1,450–1,500 m, 2♀, 4♂. *Magdalena*. Minca Vall., Sierra Nevada de Santa Marta, 900 m, 5♀, 20♂. *Santander*. Río Opón, 1,000 m, ♀. *Antioquia*. Mutatá, 3♀. *Meta*. El Porvenir, ♀; Villavicencio, 500 m el., ♂; 20 km W Villavicencio, ♀; Cisneros, Río Quebrada Descansión, ♂; 15 km SW Puer-

to López, 200 m, ♀, ♂; Carimagua, ♂. *Boyacá*. Río Suárez, 800–1,000 m, ♀; Río Dpan, 3♀. *Cundinamarca*. Monteredondo, 1,200 m, ♀. *Valle*. Cali Distr., ♀. ECUADOR: *Prov. Esmeraldas*. Carondelet, 4♀ (BMNH). BRAZIL: *Est. Pará*. Belém, ♀ (AMNH); Santarém, 2♀ (NMW). *Ceará*. Maranguape Mts., ♀ (MCZ).

*Micrathena funebris* (Marx in Banks)  
Plate 1; Figures 732–740; Map 12

*Acrosoma funebre* Marx in Banks, 1898: 249. Female syntypes from Calmilla Mines and Sierra San Nicholas [Baja California] (CAS), destroyed; two syntypes from Mazatlan (MCZ), examined.

*Acrosoma maculata* Banks, 1900: 100. Female holotype from Arizona (MCZ), examined.

*Micrathena granulata* F. P.-Cambridge, 1904: 533, pl. 50, fig. 12, ♂. Male holotype from Teapa, Mexico (BMNH), examined.

*Micrathena catenulata* F. P.-Cambridge, 1904: 538, pl. 51, fig. 24, ♀. Three female syntypes from Sakiyac, Chamiquin, four in poor condition from Cahabon, two in poor condition from Quezaltepeque, and two females from Ayutla, Guatemala with locality labels only (BMNH), examined and labeled. Reimoser, 1917: 97. Roewer, 1942: 955. Bonnet, 1957: 2863. Chickering, 1961: 398, figs. 9–13, ♀. NEW SYNONYMY.

*Micrathena funebris*:—Levi, 1978: 428, figs. 28–40, ♀, ♂.

*Synonymy*. Specimens of *M. catenulata* were within the variation found in *M. funebris*.

*Variation*. Females vary in total length from 5.2 to 7.6 mm, males from 3.1 to 4.5 mm. This is a variable species. The carapace of females ranges in color from yellow to black, with or without a narrow

Figures 712–719. *Micrathena sexspinosa* (Hahn). 712–716. Female. 712. Lateral. 713. Dorsal. 714. Epigynum, ventral. 715. Epigynum, posterior. 716. Epigynum, lateral. 717–719. Male. 717. Dorsal. 718. Left palpus, mesal. 719. Palpus, lateral.

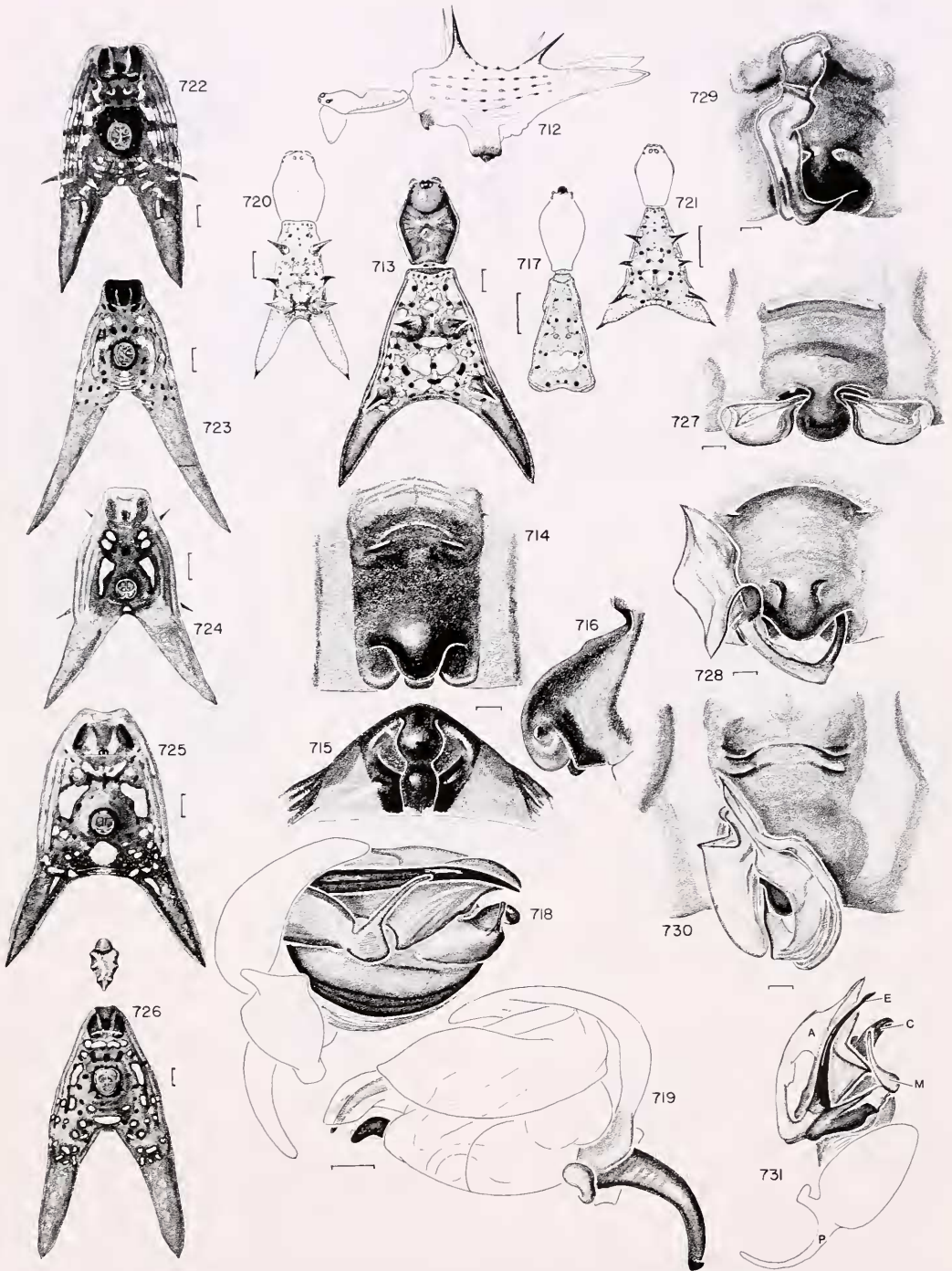
Figures 720–721. Immatures of *spinosa* group. 720. *Micrathena spinosa*. 721. *Micrathena sexspinosa*.

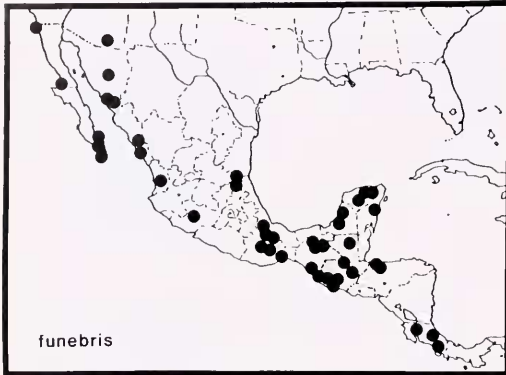
Figures 722–726. Venter of female abdomen. 726. Sternum and abdomen. 722. *M. pichincha*. 723. *M. brevipes*. 724. *M. soaresi*. 725. *M. coca*. 726. *M. sexspinosa*.

Figures 727–730. Epigynum plugged by terminal apophyses and embolus. 727. *M. donaldi*. 728. *M. spinosa*. 729. *M. coca*. 730. *M. sexspinosa*.

Figure 731. Expanded left palpus of *M. sexspinosa* showing embolus (E) and terminal apophysis (A). The other face, the "underside" of the left terminal apophysis and left embolus, are seen in the epigynum (Fig. 730).

Scale lines. 0.1 mm, except Figures 712, 713, 717, 720–726, 1.0 mm.





Map 12. Distribution of *Micrathena funebris*.

rim. It has from two to eight soft projections on the abdomen. If with two projections, the third pair are present; the most likely pairs to be lost are the first (the anterolaterals) and the fourth (posteroventrals). Some females have only a few black marks on the abdomen (Fig. 733), others are black, white and orange, resembling the colors of immature widow spiders *Latrodectus* (Fig. 734). The epigynum is variable in outline, but sometimes with a light patch on the anterior face (Fig. 735). Males have a variable number of macrosetae on the first femora (Fig. 738). Other illustrations are in Levi, 1978: figures 16–27.

*Note.* Several collections contain series of females collected with males.

*Diagnosis.* There are no similar species. The shape of the abdomen, longer than wide, with variable number of fleshy projections, is diagnostic, as is the bulging epigynum, whose openings are postero-dorsal and always apart (Figs. 735–737).

Males have a unique median apophysis bearing a thorn and an adjacent shorter spine (Fig. 739), and a rectangular paracymbium with punctate sculpturing (Fig. 740).

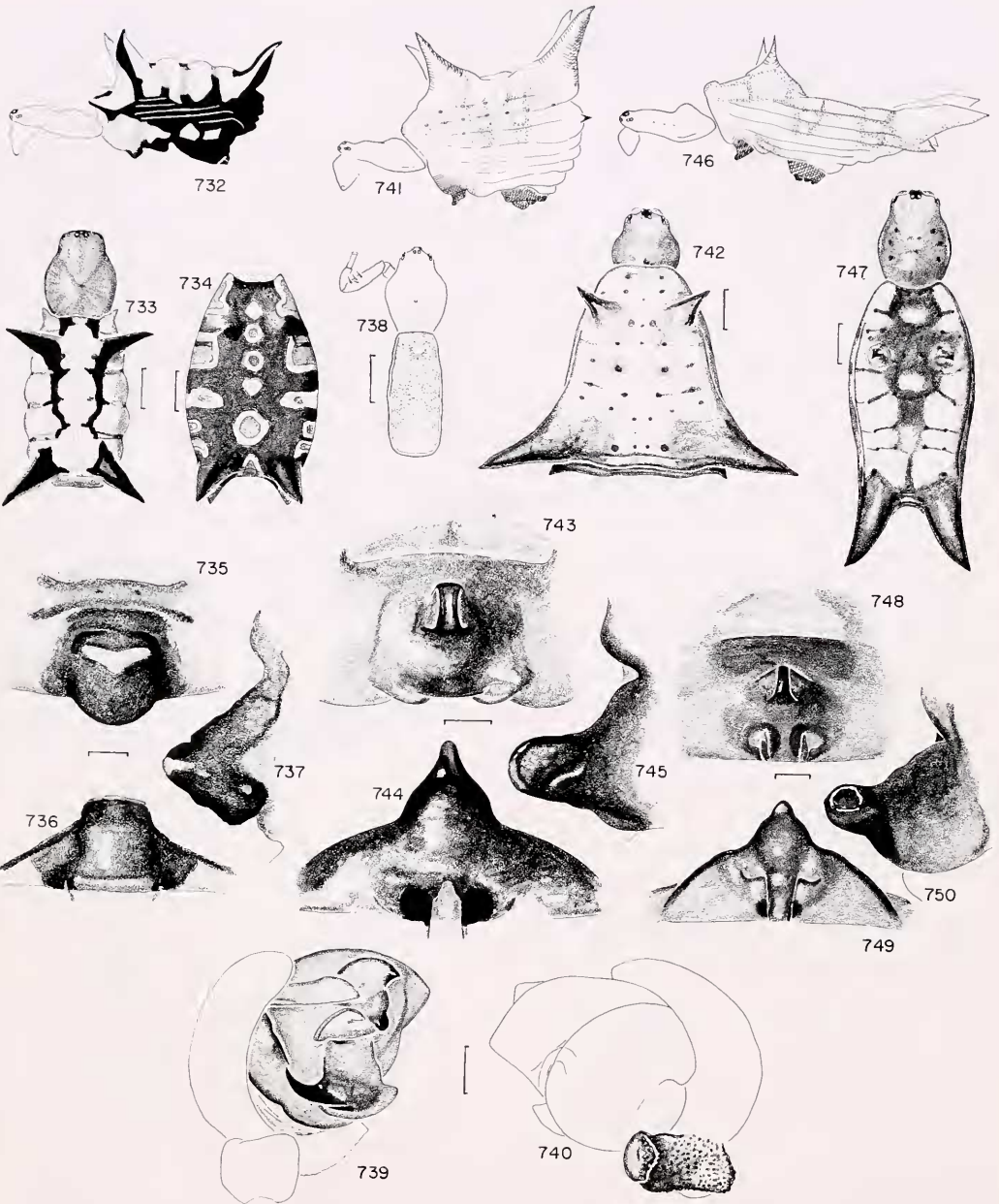
*Distribution.* Arizona to Costa Rica (Map 12).

*Records.* USA: Arizona. Pima Co: Sabinio Pond (JAB). MEXICO: Est. Sonora. (AMNH); Minas Nuevas (AMNH); Alamos (AMNH), 2♀ (CAS); Ciudad Obregon, ♀ (CAS). Baja California. 14 km SW La Paz, ♀ (EMUC); 8 km S Miraflores, ♀ (EMUC). San Luis Potosí. Tamazunchale (AMNH); Huichihuayan (AMNH); 5 km W El Naranjo, 2♀ (LC). Sinaloa. 64 km S of Culiacán (AMNH). Nayarit. Tepic (AMNH); La Mesa (AMNH); SE Tepic, ♀ (CAS). Veracruz. SE of Córdoba, ♀ (JB). Michoacan. 16 km S Uruapan, 2♀ (EMUC). Oaxaca. SE of Nejapa (AMNH); Tehuantepec (AMNH); Soyaltepec (AMNH); Temescalapa, 2♀, ♂ (MCZ); 13 km S Tuxtepec, 6♂ (MCZ). Tabasco. Teapa (AMNH). Campeche. San José (AMNH); 6 km W of Francisco Escarcega, ♀ (MCZ). Yucatan. Chichen Itza (AMNH); Cardillera Mayapán (AMNH); Colonia Yucatan, ♂ (MCZ). Quintana Roo. Tumba (AMNH); Tancá (MCZ). Chiapas. Escuintla (MCZ); Ocosingo (AMNH); Huehuetán (AMNH); 105 km SE Palenque, ♀ (MCZ). GUATEMALA: Variedades (AMNH); Chicacao; Amatitlán (AMNH); Tikal, 2♀ (EMUC); Nueva Concepcion, ♀ (CAS). HONDURAS: Lancetilla (MCZ). Tela, (MCZ). COSTA RICA: Prov. Cartago. Turrialba, ♀ (AMNH). Guanacaste. Bagaces, Palo Verde, ♀ (MCZ). Puntarenas. 24 km S of Volcán, 12 July 1970, ♀ (S. Riechert, SR).

### The *gracilis* Group

The *gracilis* group is characterized by the distinct genitalia. In females, the bulge of the epigynum is drawn out into a laterally flattened tip, with the flat area slightly indented (Figs. 743–745, 748–750). The male palpus has a weakly sclerotized median apophysis bearing a soft white fin-

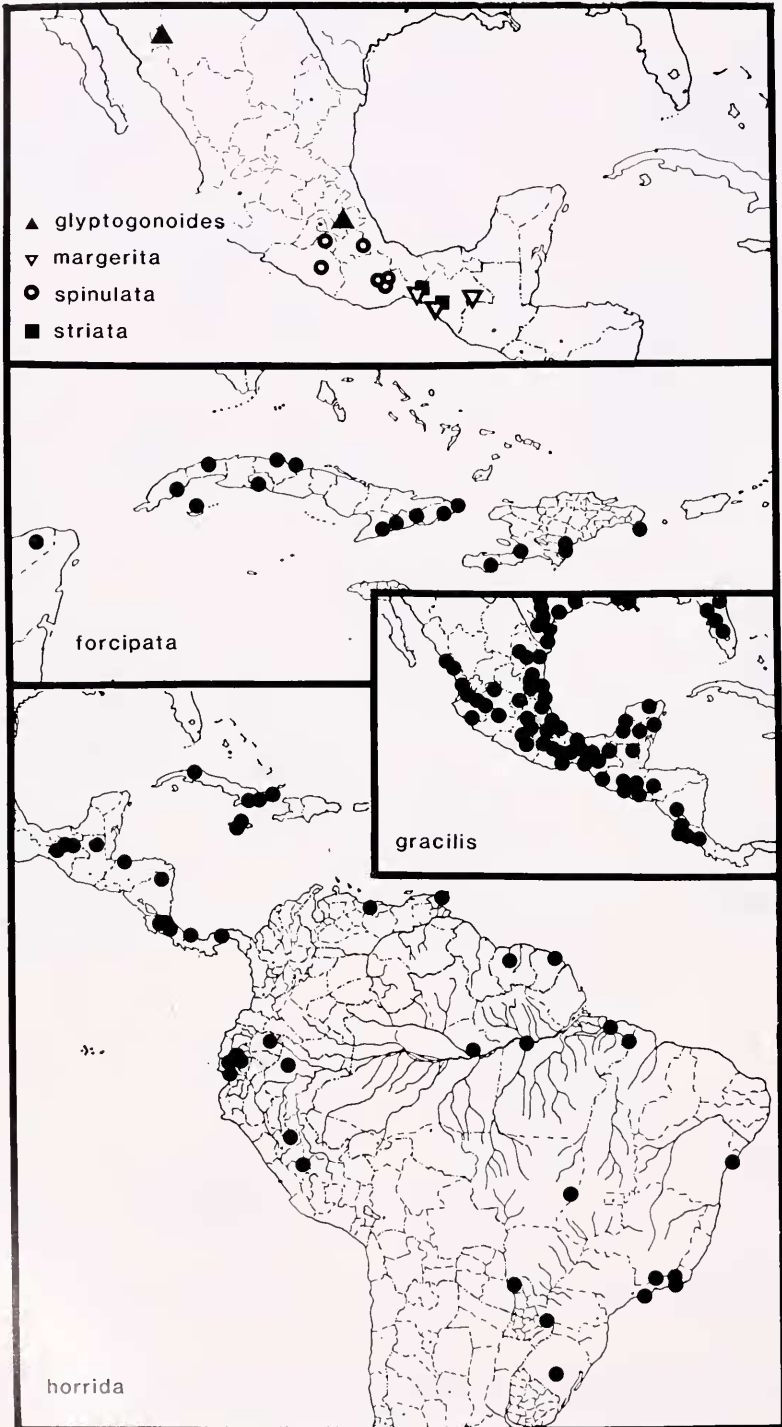




Figures 741-745. *Micrathena striata* F. P.-Cambridge, female. 741. Lateral. 742. Dorsal. 743. Epigynum, ventral. 744. Epigynum, posterior. 745. Epigynum, lateral.

Figures 746-750. *Micrathena margerita* n. sp., female. 746. Lateral. 747. Dorsal. 748. Epigynum, ventral. 749. Epigynum, posterior. 750. Epigynum, lateral.

Scale lines. 0.1 mm, except Figures 732-734, 738, 741, 742, 746, 747, 1.0 mm.



Map 13. Distribution of *Micrathena* species of the *gracilis* group.

ger (Figs. 768, 772, 782). The palpal tibia is not modified (not drawn out distally on its mesal side). Most parts of the palpus appear weakly sclerotized.

The abdomen of all females has the ring around the spinnerets only lightly sclerotized. Males have a rectangular to elongate abdomen that may be posteriorly segmented (Figs. 767, 771, 781). All lack a hook on the first coxa and a corresponding groove on the second femur.

Diagnostic features for species are, in females, the number and shape of abdominal spines (Figs. 742, 752, 757, 763, 777). In males the easiest diagnostic feature is the shape of the paracymbium (Figs. 769, 773, 783), and perhaps the shape of the abdomen (Figs. 767, 771, 781).

Specimens collected together are generally similar. The extreme variation in shape of the female abdomen in several species (*M. forcipata*, Figs. 762, 763; *M. gracilis* and *M. horrida*, Figs. 774-777) is unusual.

Most species are found in southern Mexico and Guatemala. Only one, *M. horrida*, is found in South America (Map 13).

KEY TO THE GRACILIS GROUP

Females

- 1. Abdomen as long as wide, with only four humps (Figs. 756, 757); Mexico, Map 13 ..... *glyptogonoides*
- Abdomen usually longer than wide, with six or more humps or spines (Figs. 741, 746, 751, 770, 774) ..... 2
- 2(1) Abdomen with six humps (rarely eight) or spines ..... 3
- Abdomen with at least 10 humps or spines ..... 6
- 3(2) Second pair of spines with granular texture, often with neck and widest near tip (Figs. 762, 763); Yucatan, Cuba, Hispaniola, Map 13 ..... *forcipata*
- Second pair of spines smooth and without neck; Mexico and Central America ..... 4
- 4(3) Spines small and subequal in size (Figs. 751, 752); Central Mexico, Map 13 ..... *spinulata*
- First and second pair of spines much larger than third (Figs. 741, 746) ..... 5
- 5(4) Abdomen length twice width, slightly constricted before posterodorsal spines (Fig. 747); Chiapas, Map 13 ..... *margherita*
- Abdomen length at most one and a half times width, without posterodorsal con-

- striction (Fig. 742); Chiapas, Guatemala, Map 13 ..... *striata*
- 6(2) Abdomen with 12 or more humps or spines (Figs. 774-777), and with ventral hump behind spinnerets (Figs. 774, 775); Mexico, West Indies to southeastern Brazil, Map 13 ..... *horrida*
- Abdomen with 10 humps or spines, without ventral hump behind spinnerets (Fig. 770); eastern North America to Costa Rica, Map 13 ..... *gracilis*

Males

(Only the males of *M. forcipata*, *M. gracilis* and *M. horrida* are known.)

- 1. Posterior end of abdomen truncate (Fig. 767); paracymbium a flat lobe without keel (Fig. 769); Yucatan, Cuba, Hispaniola, Map 13 ..... *forcipata*
- Posterior end of abdomen appearing segmented (Figs. 771, 781); paracymbium with a keel (Figs. 773, 783) ..... 2
- 2(1) Base of paracymbium with a keel parallel to axis of cymbium, next to a flat lobe (Fig. 783); conductor below embolus (in middle of palpus in mesal view) with single thorn (Fig. 782); Mexico, West Indies to southeastern Brazil, Map 13 ..... *horrida*
- Base of paracymbium with a keel at right angles to cymbium axis; paracymbium hook-shaped (Fig. 773); conductor below embolus with a parallel, sclerotized piece above thorn (Fig. 772); eastern North America south to Costa Rica, Map 13 ..... *gracilis*

*Micrathena striata* F. P.-Cambridge  
 Figures 741-745; Map 13

*Micrathena striata* F. P.-Cambridge, 1904: 530, pl. 50, fig. 6, ♀. Female syntype from Chichochoch [? locality not found], Guatemala (BMNH), examined. Roewer, 1942: 964. Bonnet, 1957: 2879. Chickering, 1961: 460, figs. 185-188, ♀.

*Note.* Chickering designated a lectotype; this was not seen. There are also three female specimens in the British Museum without locality labels.

*Description.* Female syntype. Carapace, legs orange-brown. Sternum blackish brown. Dorsum of abdomen with yellowish white pigment; spines orange; venter black. Carapace with a circular median thoracic depression; rim indistinct in dorsal view. Abdomen with two pairs of large dorsal spines, posterolaterals largest, and one pair of small posterior spines (Figs. 741, 742). Total length, 6.6 mm.

Carapace, 2.4 mm long, 1.9 mm wide. First femur, 2.4 mm; patella and tibia, 2.4 mm; metatarsus, 1.6 mm; tarsus, 0.8 mm. Second patella and tibia, 2.2 mm; third, 1.4 mm. Fourth femur, 2.7 mm; patella and tibia, 2.3 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm.

*Variation.* Females vary in total length from 6.6 to 9.2 mm. Posterodorsal spines face laterally on the syntype from Chichochoc (Fig. 742).

*Diagnosis.* *Micrathena striata* differs from *M. spinulata* by having the first two pairs of spines much larger than the third (Figs. 741, 742); it differs from *M. margerita* by lacking dimples on the carapace and by its shorter, more compact abdomen (Figs. 741, 742).

*Natural History.* A specimen was collected in cloud forest in Chiapas.

*Distribution.* Southern Mexico, Guatemala (Map 13).

*Records.* MEXICO: *Est. Chiapas.* 21 km W of Rizo de Oro, Oaxaca border, 1,615 m, 6 Sept. 1972, ♀ (C. Mullinex, K. Lucas, CAS); Finca Patichuiz, 53 km NE Las Margeritas, 2,000 m, 22 Oct. 1962, ♀ (A. Gardner, JAB).

#### *Micrathena margerita* new species Figures 746–750; Map 13

*Holotype.* Female from Finca Patichuiz, 33 mi. [53 km] NE of Las Margeritas, 6,000 ft. [2,000 m], Chiapas, Mexico, 11 Oct. 1962 (A. Gardner, MCZ). The specific name is a noun in apposition after the type locality.

*Description.* Carapace orange, dusky black in thoracic region. Sternum black. Coxae orange. Legs dusky orange, first two femora darkest. Dorsum of abdomen with white patches on black; sides dark; venter black with three pairs of indistinct light patches. Carapace with three pairs of dimples and distinct thoracic depression; thorax high. Eyes subequal in size. Abdomen longer than wide, branched behind, with a pair of spines one third from anterior and one pair below branches. Total length, 8.0 mm. Carapace, 2.6 mm

long, 1.9 mm wide. First femur, 2.5 mm; patella and tibia, 2.4 mm; metatarsus, 1.7 mm; tarsus, 0.7 mm. Second patella and tibia, 2.2 mm; third, 1.4 mm. Fourth femur, 3.0 mm; patella and tibia, 2.3 mm; metatarsus, 1.8 mm; tarsus, 0.7 mm.

*Diagnosis.* This species differs from *M. striata* by its slender, biforked abdomen, and by having dimples on the carapace (Figs. 246, 247).

*Natural History.* One collection comes from a cloud forest.

*Distribution.* Chiapas, Mexico (Map 13).

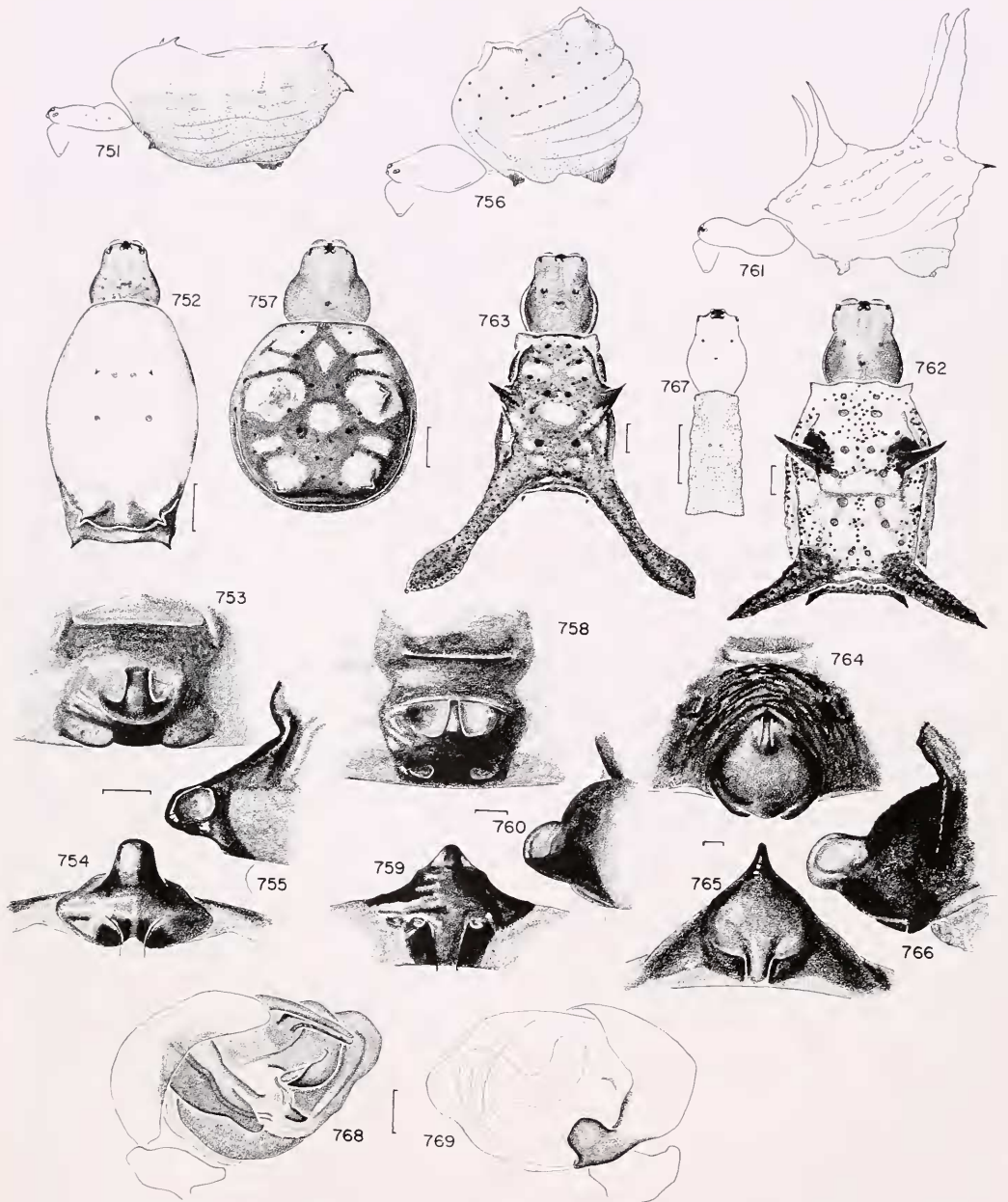
*Paratypes.* MEXICO: *Est. Chiapas.* 53 km NE of Las Margeritas, 2,000 m, 11 Oct. 1962, 3♀, 22 Oct. 1962, ♀ (A. Gardner, JAB); 21 km W Rizo de Oro, Oaxaca border, 1,615 m, 6 Sept. 1972, 2♀ (C. Mullinex, K. Lucas, CAS); Lago Tziscaco, Montebello, 17–18 Aug. 1973, ♀ (P. Brignoli, PMB).

#### *Micrathena spinulata* F. P.-Cambridge Figures 751–755; Map 13

*Micrathena spinulata* F. P.-Cambridge, 1904: 530, pl. 50, fig. 7, ♀. Four female syntypes from Amula [Guerrero, 17°38': 9°15'], one syntype from Omilteme [Guerrero, WSW of Chilpancingo, 2,400 m el.], Mexico (BMNH), examined. Roewer, 1942: 964. Bonnet, 1957: 2879. Chickering, 1961: 459, figs. 181–184, ♀.

*Description.* Carapace, legs orange-brown. Sternum black. Dorsum of abdomen white, posteriorly black. Sides, venter black with three indistinct pairs of light patches on venter. Carapace with three pairs of dimples and distinct median thoracic depression; rim indistinct. Abdomen longer than wide, with three pairs of tiny spines, two pairs of which face posterior (Figs. 751, 752). Total length, 6.3 mm. Carapace, 1.9 mm long, 1.6 mm wide. First femur, 1.9 mm; patella and tibia, 1.8 mm; metatarsus, 1.2 mm; tarsus, 0.6 mm. Second patella and tibia, 1.7 mm; third, 1.0 mm. Fourth femur, 2.3 mm; patella and tibia, 1.7 mm; metatarsus, 1.3 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 5.4 to 6.3 mm. Some specimens have



Figures 751–755. *Micrathena spinulata* F. P.-Cambridge, female. 751. Lateral. 752. Dorsal. 753. Epigynum, ventral. 754. Epigynum, posterior. 755. Epigynum, lateral.

Figures 756–760. *Micrathena glyptogonoides* n. sp., female. 756. Lateral. 757. Dorsal. 758. Epigynum, ventral. 759. Epigynum, posterior. 760. Epigynum, lateral.

Figures 761–769. *Micrathena forcipata* (Thorell). 761–766. Female. 761. Lateral. 762, 763. Dorsal. 764. Epigynum, ventral. 765. Epigynum, posterior. 766. Epigynum, lateral. 767–769. Male. 767. Dorsal. 768. Left palpus, mesal. 769. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 751, 752, 756, 757, 761–763, 767, 1.0 mm.

paired black patches on the dorsum. The illustrations were made from the Amula syntype.

*Diagnosis.* *Micrathena spinulata* differs from *M. striata* and *M. margerita* by having all six spines the same size (Figs. 751, 752).

*Distribution.* South-central Mexico (Map 13).

*Records.* MEXICO: *Est. Veracruz.* pass above Orizaba, 1,900 m, 29 June 1944, ♀ (L. I. Davies, AMNH). *Morelos.* Tepoztlan, 1,600 m, 2 Aug. 1942, 3♀ (C. Bolivar, M. Santullano, AMNH). *Guerrero.* 18 km W of Chilpancingo, 30 July 1956, ♀ (W. Gertsch, V. Roth, AMNH).

*Micrathena glyptogonoides* new species  
Figures 756–760; Map 13

*Holotype.* Female from Necaxa, Puebla, Mexico, 23 September 1972 (collector unknown, AMNH). The specific name was a manuscript name applied by A. F. Archer to this species.

*Description.* Female. Carapace, chelicerae, sternum, coxae and trochanters orange. Legs black. Dorsum of abdomen with paired and median white patches; sides and venter black without marks. Carapace high, median thoracic depression indistinct, no rim. Eyes subequal in size. Abdomen subspherical with two pairs of dorsal humps, each tipped by a tubercle (Figs. 756, 757). Total length, 6.7 mm. Carapace, 2.4 mm long, 2.2 mm wide. First femur, 1.9 mm; patella and tibia, 2.0 mm; metatarsus, 1.2 mm; tarsus, 0.7 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.2 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm.

*Variation.* Paratypes have the sides and dorsum of abdomen light.

*Diagnosis.* This species differs from others of the *gracilis* group by the subspherical abdomen having only four humps (Figs. 756, 757). All other species have six or more spines or humps.

*Paratypes.* MEXICO: *Est. Chihuahua.* La Polvosa, 1,950 m, 108°39'W, 28°9'N, 16 Aug. 1958, 3♀ (L. R. Commisoris, AMNH).

*Micrathena forcipata* (Thorell)  
Figures 761–769; Map 13

*Acrosoma forcipatum* Thorell, 1859: 300. Female type from Cuba, lost.

*Acrosoma flavomaculatum* Keyserling, 1864: 77, pl. 2, fig. 10, ♀. Female holotype from Haiti (BMNH), examined. Keyserling, 1892, 4: 24, pl. 1, fig. 21, ♀.

*Micrathena cylindracea* Franganillo, 1930: 76; 1936: 96. Juvenile (?) from Sierra Maestra, Cuba, lost. First synonymized by Bryant.

*Micrathena forcipata*:—Bryant, 1940: 372, figs. 149, 151 (not figs. 141, 146, male). Chickering 1964: 257, figs. 11–15, ♀ (not male).

*Micrathena bryantae* Chickering, 1964: 254, figs. 1–3, ♂. Male holotype from Los Llanos [Prov. Guantánamo], Cuba, 1,000–2,000 ft. [300–600 m] (MCZ), examined. NEW SYNONYMY.

*Synonymy.* Chickering's *M. bryantae* is the male of this species.

*Description.* Female. Carapace, sternum, legs brown. Dorsum of abdomen white with brown to black patches; spines orange; venter black with paired white spots. Carapace with thoracic depression, one pair of dimples; thorax high with narrow rim. Abdomen with two pairs of dorsal spines and one small pair posteriorly, sometimes with small anterior spines overhanging carapace (Figs. 761–763). Total length, 8.5 mm. Carapace, 3.1 mm long, 2.6 mm wide. First femur, 2.8 mm; patella and tibia, 2.8 mm; metatarsus, 2.0 mm; tarsus, 0.7 mm. Second patella and tibia, 2.6 mm; third, 1.5 mm. Fourth femur, 3.9 mm; patella and tibia, 3.0 mm; metatarsus, 2.4 mm; tarsus, 0.9 mm.

Male. Carapace rich dark brown, sternum blackish brown. Legs light brown. Dorsum of abdomen with a black pattern and white patches; venter gray. Carapace with circular thoracic depression and a pair of dimples. Sternum slightly rugose. Abdomen rectangular, sides slightly lobed (Fig. 767). Total length, 3.7 mm. Carapace, 1.5 mm long, 0.9 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.3 mm; third, 0.7 mm. Fourth femur, 1.6 mm; patella and tibia, 1.5 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 7.2 to 10.3 mm, males from 3.4 to 4.5 mm. The females may have small anterior spines, or these may be absent. Large posterodorsal spines are of variable length, sometimes much longer than the body, and often swollen at their tip (Figs. 762, 763).

*Note.* Males and females have been collected together.

*Diagnosis.* This species has genitalia similar to *M. gracilis* and *M. horrida*. Females differ by having the large posterolateral spines soft with tiny platelets, rugose in appearance (Figs. 762, 763). The male differs by the shape of the abdomen (Fig. 767), by the mitten-shaped paracymbium (Fig. 769) and by the shape of the conductor (Fig. 768).

*Distribution.* Yucatan, Cuba and Hispaniola (Map 13).

*Records.* MEXICO: *Est. Yucatan.* Coscomatepec [?], 25 Aug. 1963, ♀ (D. L., H. E. Frizzell, EPC). CUBA: *Prov. Santiago de Cuba.* Cuchillo de Guájimero, 600 m, 22 July 1936, ♀ (P. J. Darlington, MCZ); Sierra Maestra, 15–20 May 1948, ♀ (G. Acuna, MCZ); coast below Pico de Turquino, 1936, ♀ (P. J. Darlington, MCZ). *Guantánamo.* Los Llamos, 300–600 m, 16–20 July 1936, 3♀ (P. J. Darlington, MCZ); mts. north of Imías, 25–28 July 1936, 2♀ (P. J. Darlington, MCZ). *Havana.* Havana, ♀ (Baker, MCZ). *Ciego de Avila.* Cayo La Salina, ♀ (MCZ). *Cienfuegos.* Soledad (sev. coll., MCZ, CASH). *Pinar del Río.* Galalon, juv. (P. Berm., MCZ); Sierra del Rosario, Inst. Botany, ♀ (R. Levins, MCZ); Cuajani, 13 Jan. 1974, 2♀ (G. Alayón, CASH). *Isla de Pinos.* 1918, 2♀ (T. Barbour, MCZ); Sierra Isabelita, La Fe, 27 April 1974, ♀ (M. Diaz, CASH); Sierra Caballos, 16 June 1974, 3♀, ♂ (F. Armas, CASH). *Villa Clara.* Vega Alta, ♀ (P. Bermudez, AMNH). *Granma.* Uvero, Las Virgenes, Sierra Maestra, 700 m, 25 May 1972, ♀ (G. Alayón, CASH). HAITI: 3 km E of Cayes du Jacmel, 2 Sept. 1935, ♀ (W. G. Hassler, AMNH). Carrefour, 22 July 1955, ♀ (A. F. Archer, AMNH). DOMINICAN REPUBLIC: *Barahona.* Mt. Busú,

Sierra Martín García, June 1983, ♀ (G. Flores, MCZ); 3 km S of Barahona, 16 Aug. 1935, ♀ (W. Hassler, AMNH). *La Altagracia.* Isla Saona, 18 July 1974, ♀ (J. A. Steinwalder, MNSD).

*Micrathena gracilis* (Walckenaer)  
Figures 770–773; Map 13

*Epeira gracilis* Walckenaer, 1805: 65. Female from Carolina, lost.

*Acosoma matronale* C. L. Koch, 1845: 68, fig. 887, ♀. Female from Mexico (ZMB), examined.

*Micrathena nigrior* Chamberlin and Ivie, 1936: 58, figs. 134, 135, ♀. Four female syntypes from Barro Colorado Island, Gatún Lake, Panama (AMNH), examined.

*Micrathena gracilis*.—Levi, 1978: 433, figs. 55–68, ♀, ♂, map 2.

*Synonymy.* Despite the large collections available, no other specimens of this species were found from Barro Colorado Island. The locality of *M. nigrior* may be in error.

*Diagnosis.* Females differ from *M. horrida* by having only ten spines or humps on the abdomen, and by lacking a hump behind the spinnerets (Fig. 770). Immature females also lack this hump, present in *M. horrida*. Males differ by the shape of the paracymbium (Fig. 773) and of the conductor below the embolus (Fig. 772). Also, in mesal view the embolus appears filamentous (Fig. 772).

*Distribution.* Eastern North America south to Costa Rica (Levi, 1978) (Map 13).

*Records.* MEXICO: *Est. Tamaulipas.* Tampico; 100 km S Ciudad Victoria; N of Antiguo Morelos; 26 km WNW Ocampo. *Nuevo León.* Linares; 30 km S of Monterrey; San Nicolás de los Garza. *San Luis Potosí.* 5 km W El Naranjo; Valles. *Sinaloa.* Elota; Mazatlan; 20 km N Elota. *Guanajuato.* Silao. *Nayarit.* Tepic; Compostela; Jalisco. *Jalisco.* Guadalajara; Lagos de Moreno; S side Lago Chapala; San Juan de los Lagos; La Floresta. *Veracruz.* common. *Distrito Federal.* Ciudad Mexico. *Michoacán.* Pátzcuaro; Uruapan. *Puebla.* Acatlan. *Morelos.* Cuernavaca. *Guerrero.* Teloloapán; Taxco; Chilpancingo. *Oaxaca.* common. *Campeche.* Lerma;

San José; Campeche; Chicanna ruins, 8 km W Xpujil. *Yucatan*. Chichen Itza; Pisté; 3 km E of Chichen Itza. *Quintana Roo*. Esmerelda; Tumba; Kohulich ruins, 9 km S Francisco villa. *Chiapas*. common. GUATEMALA: *Dept. El Petén*. Tikal. *Guatemala*. Guatemala City. *Santa Rosa*. Variedades. *Chiquimula*. Chiquimula. BELIZE: Belize. HONDURAS: Zambrano. EL SALVADOR: San Salvador; Quezaltepeque; La Libertad. NICARAGUA: Masatepe. COSTA RICA: *Prov. Alajuela*. Atenas. *Guanacaste*. Cañas; *Prov. Santa Rosa N.P.*; Bederó; Playa Hermosa, 20 m; Liberia. *San José*. San José; San Antonio de Escazú, 1,350 m.

*Micrathena horrida* (Taczanowski)  
Figures 774–783; Map 13

*Acrosoma horrida* Taczanowski, 1873: 281, pl. 6, fig. 31, ♀. Female holotype from Cayenne, French Guiana (PAN), examined.

*Acrosoma raceminum* Butler, 1873: 427. Female holotype (in poor condition, with pinhole in abdomen) from Orinoco, Venezuela (BMNH), examined. NEW SYNONYMY.

*Acrosoma mammillata* Butler, 1873: 427. Female holotype (abdomen only) from Santarém, Brazil (BMNH), examined.

*Acrosoma longicaudum* O. P.-Cambridge, 1890: 61, pl. 8, fig. 9, ♂. Male holotype from Bugaba, Panama (BMNH), lost. Keyserling, 1892: 15, pl. 1, fig. 11, ♂. F. P.-Cambridge, 1904: 530, pl. 50, fig. 5, ♂.

*Micrathena horrida*:—Simon, 1895: 851, figs. 898, 919, ♀. Petrunkevitch, 1910: 212, pl. 21, figs. 9–11, ♀. Reimoser, 1917: 959. Bonnet, 1957: 2870. Chickering, 1961: 424, figs. 83–88, ♀, ♂.

*Micrathena simoni* Petrunkevitch, 1910: 213. New name for Simon's (1895) illustration figs. 898, 919 of *M. horrida*.

*Micrathena gracilis*:—Franganillo, 1936: 98 (misidentification)

*Micrathena mammillata*:—Bryant, 1940: 374, figs. 142, 147, 155, ♀, ♂.

*Micrathena multituberculata* di Caporiacco, 1947: 25. Female holotype from British Guyana (MZUF), examined. 1948: 665, figs. 75–78, ♀. NEW SYNONYMY.

*Note*. The type of *A. longicaudum* is lost, but a specimen of O. P.-Cambridge with the name comes from Teapa, Mexico. The specimens of *A. raceminum* and *M. multituberculata* are within the variation and range of *M. horrida*.

*Description*. Female from Panama. Carapace orange-brown, sclerotized areas darker brown, with some dark gray markings above rim of carapace; rim light. Sternum, legs orange-brown. Abdomen gray to orange with some black marks. Total length, 7.5 mm. Carapace, 3.3 mm long, 2.3 mm wide. First femur, 2.1 mm; patella and tibia, 2.2 mm; metatarsus, 1.3 mm; tarsus, 0.7 mm. Second patella and tibia, 1.9 mm; third, 1.3 mm. Fourth femur, 2.7 mm; patella and tibia, 2.2 mm; metatarsus, 1.4 mm; tarsus, 0.8 mm.

Male from Panama. Carapace brown. Sternum grayish brown. Legs lighter brown. Abdomen brown with white patches along margin, some gray and black pigment above. Carapace and abdomen corniculate. Thorax with a distinct depression and a pair of dimples. Abdomen long, segmented posteriorly (Fig. 781). Total length, 4.5 mm. Carapace, 1.2 mm long, 0.7 mm wide. First femur, 0.7 mm; patella and tibia, 0.8 mm; metatarsus, 0.4 mm; tarsus, 0.3 mm. Second patella and tibia, 0.6 mm; third, 0.4 mm. Fourth femur, 0.9 mm; patella and tibia, 0.6 mm; metatarsus, 0.6 mm; tarsus, 0.4 mm.

*Variation*. Females vary in total length from 7.0 to 11.5 mm, males from 4.5 to

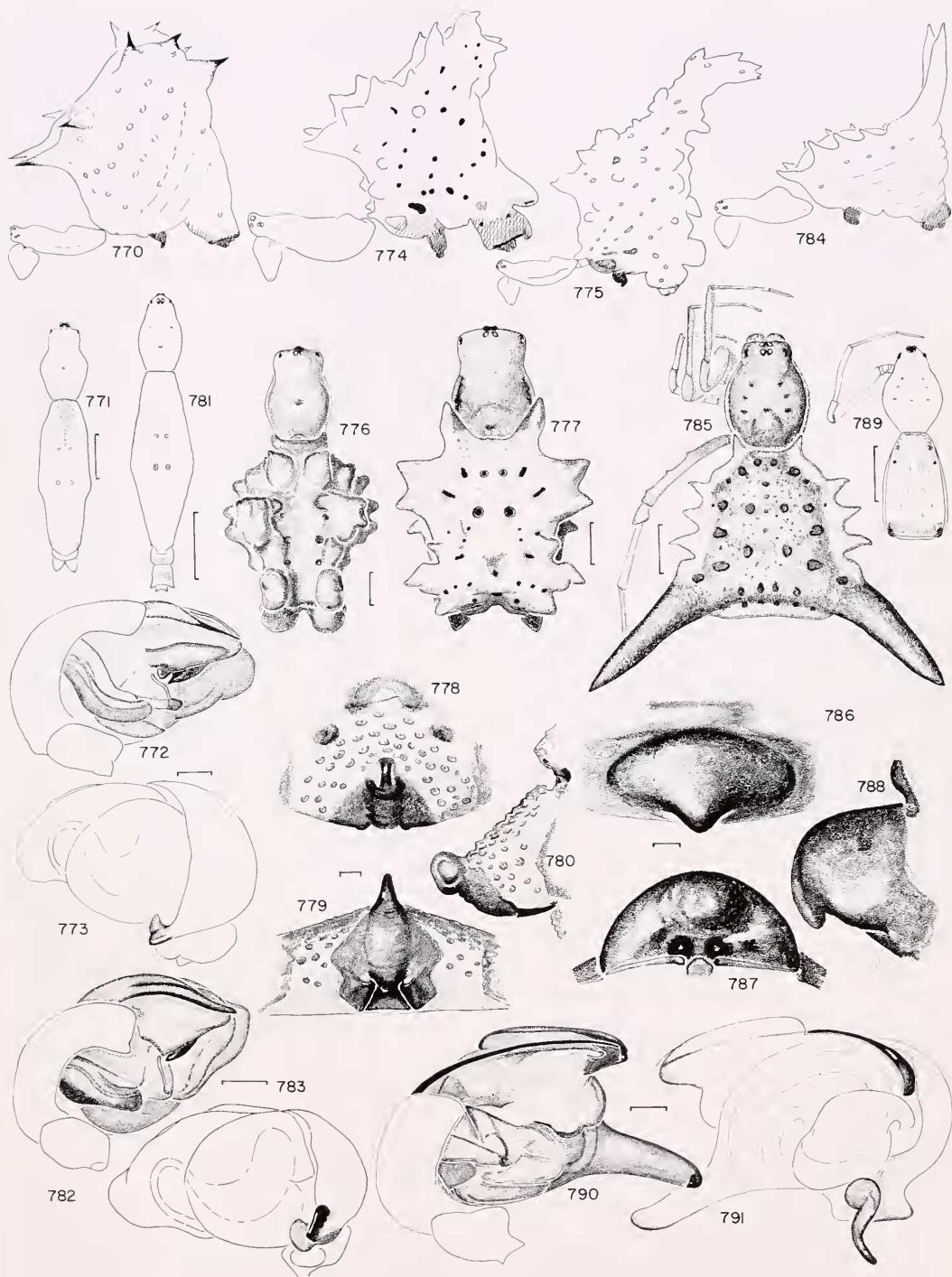
Figures 770–773. *Micrathena gracilis* (Walckenaer). 770. Female, lateral. 771–773. Male. 771. Dorsal. 772. Left palpus, mesal. 773. Palpus, lateral.

Figures 774–783. *Micrathena horrida* (Taczanowski). 774–780. Female. 774, 775. Lateral. 776, 777. Dorsal. 774, 777. (Panama). 775, 776. (Orinoco, Venezuela). 778. Epigynum, ventral. 779. Epigynum, posterior. 780. Epigynum, lateral. 781–783. Male. 781. Dorsal. 782. Palpus, mesal. 783. Palpus, lateral.

Figures 784–791. *Micrathena pungens* (Walckenaer). 784–788. Female. 784. Lateral. 785. Dorsal. 786. Epigynum, ventral. 787. Epigynum, posterior. 788. Epigynum, lateral. 789–791. Male. 789. Dorsal. 790. Palpus, mesal. 791. Palpus, lateral.

Scale lines. 0.1 mm, except Figures 770, 771, 774–777, 781, 784, 785, 789, 1.0 mm





5.0 mm. Some individuals have a bold pattern of black patches on white on the dorsum of the abdomen. The carapace at times has dimples. The abdomen of females has slender humps (Fig. 777), swollen humps (Fig. 776), or at times has a tail (Fig. 775).

*Note.* There are numerous collections of this common species having both male and female individuals.

*Diagnosis.* This species can be confused with *M. gracilis*. *M. horrida* has twelve or more humps on the abdomen, often many more (Figs. 774–777), whereas *M. gracilis* has only ten. Also, *horrida* females always have a hump behind the spinnerets (Figs. 774, 775), while *gracilis* does not. The hump is present in immatures.

The male can be separated by the paracymbium having a keel almost parallel to the axis of the cymbium, and a flat lobe next to it (Fig. 783); *M. gracilis* has a hook-shaped paracymbium with a keel almost at right angles to the axis of the cymbium. The embolus of *M. horrida* is a wide and semi-transparent structure (Fig. 782); the conductor behind and below the embolus has a sclerotized tooth of variable shape (in the middle of the palpus in Fig. 782). The embolus of *M. gracilis*, on the other hand, is a black filament, the conductor having a double lobed, sclerotized structure.

*Natural History.* *Micrathena horrida* is found in forests.

*Distribution.* Cuba, Jamaica, Chiapas, Mexico to Paraguay (Map 13).

*Records.* MEXICO: *Chiapas*. Palenque ruins, May 1980, imm. (J. Coddington, MCZ); Pichucalco, 17 July 1947, ♀ (C. M. Goodnight, AMNH); 32 km NW Ocozacoautla, 27 Aug. 1972, ♀ (CAS). GUATEMALA: *Dept. El Petén*. Uaxactún (MCZ). HONDURAS: Lacetilla (MCZ). NICARAGUA: Musawas, Waspuc River (AMNH). COSTA RICA: *Prov. Heredia*. Puerto Viejo, La Selva (MZCR). *Limón*. 20 km N Siquirres, 100 m, July 1980 (MCZ); Hamburg Farm (NMW). *Cartago*. Turrialba. *San José*. San Isidro del

General (MCZ). *Puntarenas*. Esparta (MCZ). PANAMA: *Cocle Prov.* El Valle, ♀ (AMNH). *Panamá*. many collections. CUBA: *Prov. Santiago de Cuba*. Pico Turquino (MCZ); Gran Piedra, 1,200 m (MCZ, CASH); Cuchillo de Guajimero, 600 m (MCZ); Puerto Boniato (MCZ). *Habana*. Tapaste (CUC). *Guantánamo*. Los Llanos (MCZ). JAMAICA: *St. Ann Parish*. Diablo Forest Reserve (AMNH). *St. Catherine*. Rio Cobre Gorge nr. Spanish Town (IJK). LESSER ANTILLES: *Trinidad*. Simla (AMNH); Arima Valley (AMNH). VENEZUELA: Maracay (MCZ); Caracas (NMW). SURINAME: *Saramacca Prov.* Voltzberg-Raleighvallen Res. (MCZ). COLOMBIA: Bugabita [?] (NMW). ECUADOR: *Est. Los Ríos*. Juan Montalvo (AMNH). *Napo*. Tarapuy (MECN). *Guayas*. Milagro (EPC). *Puna Island*. (EPC). *Bolívar*. Balzapamba, 700–800 m (AMNH). PERU: *Dept. Loreto*. Pastaza (MCZ). *Junín*. 29 km NE La Merced (CAS). *Huánuco*. Monsón Valley, Tingo María (CAS). BRAZIL: *Est. Pará*. 12 km W of Canindé (AMNH); Belém (MEG, AMNH); Santarém (BMNH); Rio Gurupi (MZSP). *Amazonas*. Manaus (NRS). *Bahia*. Urolinea Salvador (MACN). *Mato Grosso*. Chavantina (MZSP). *Rio de Janeiro*. Barra da Tijuca (MCZ); Rio de Janeiro (MNRJ); Pinheiro (MNRJ); Niterói (MNRJ); Petrópolis (MNRJ); Angra dos Reis (Praia do Leste) (MZSP). *São Paulo*. Ilha São Sebastião (MZSP). *Rio Grande do Sul*. Rambo (MNRJ). PARAGUAY: (BMNH) *Dept. Concepción*. Territ. Foncière (NMW, MCZ). ARGENTINA: *Prov. Misiones*. Río Iguazú, 60 km from Pto. Iguazú, 5 March 1957 (E. W. Partridge, MACN).

*Micrathena pungens* (Walckenaer)  
Figures 784–791; Map 14

*Plectana pungens* Walckenaer, 1841: 173. Female specimen from Cayenne, French Guyana, lost.  
*Acrosoma pungens*.—Keyserling, 1863: 72, pl. 2, fig. 5, ♀; 1892: 29, pl. 1, fig. 26, ♀.  
*Acrosoma luctuosa* Taczanowski, 1873: 267, pl. 5, fig. 21, ♀. Eleven female syntypes from Cayenne

- and St. Laurent de Maroni, French Guiana (PAN), examined. First synonymized by Chickering, 1960c.
- Micrathena luctuosa*.—Reimoser, 1917: 134. Roewer, 1942: 960. Bonnet, 1957: 2871.
- Micrathena pungens*.—Reimoser, 1917: 134. Roewer, 1942: 962. Bonnet, 1957: 2874. Chickering, 1960c: 85, figs. 76–79, ♀.
- ? *Micrathena carvalhoi* Mello-Leitão, 1944a: 9. Female holotype from Barra do Tapirapés [Est. Mato Grosso], Brazil (MNRJ), lost. NEW SYNONYMY.

**Description.** Female syntype of *M. luctuosa*. Carapace, sternum, legs brown. Dorsum of abdomen brownish black with a white band along lateral margin, including four pairs of lateral spines, and a transverse white band on posterior margin (Fig. 785); venter and sides black; sclerotized areas brown. Carapace with three pairs of dimples, the first most distinct, a circular thoracic mark and a light colored rim. Abdomen with an anterior pair of spines overhanging carapace, three pairs of spines on sides, and one large posterolateral black spine whose base has a little hump anteriorly (Fig. 785). Total length, 5.8 mm. Carapace, 2.3 mm long, 1.8 mm wide. First femur, 2.0 mm; patella and tibia, 2.3 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm. Second patella and tibia, 1.9 mm; third, 1.2 mm. Fourth femur, 2.5 mm; patella and tibia, 2.1 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

Male from Suriname. Carapace yellowish. Sternum white, dusky all around. Legs yellowish, femora dusky. Dorsum of abdomen with some white pigment spots anterolaterally; dusky anterior and posterior (Fig. 789); venter black except square orange area between epigastric groove and spinnerets. Carapace with three pairs of dimples and circular thoracic depression. Without coxal hook. Abdomen longer than wide, widest behind, and smooth, without spines (Fig. 789). Total length, 3.4 mm. Carapace, 1.6 mm long, 1.0 mm wide. First femur, 1.4 mm; patella and tibia, 1.5 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.3 mm; patella and tibia, 1.1 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm.

**Variation.** Females vary in total length from 5.5 to 7.0 mm, males 3.4 to 3.5 mm. Some older adult females have two large transverse dorsal sclerites anteriorly on the abdomen. Immature specimens have the large posterolateral spine much shorter, and have two pairs of spines on the posterior slope of the abdomen. These at times remain as small teeth or sclerotized humps in the adult. In many specimens, especially those from the Pará state, Brazil, the tip of the large spine is offset anteriorly.

**Note.** According to a note in a vial, Harriet Exline found a palp in the epigynum in a female from Divisoria, Huánuco, Peru. A male was collected with females in Suriname, another in Mato Grosso. The males were first thought to be those of *Chaetacis abrahami*; its association with *M. pungens* is uncertain.

**Diagnosis.** The female is readily separated from other species by having four pairs of light colored spines and a light colored hump on the sides of otherwise dark abdomen (Fig. 785), and by the epigynum whose tip is drawn out posteriorly, overhanging the openings on the posterior face (Figs. 786–788). The male has a palp like that of *Chaetacis* species, with a drawn out tegulum (Figs. 790, 791). It differs from males in *Chaetacis* by lacking spines or humps on the carapace.

**Natural History.** Specimens have been collected in forest savanna in Guyana and forest in Mato Grosso. One female was accompanied in the vial by a wrapped ant almost twice the length of the spider.

**Distribution.** From eastern Colombia, Venezuela, northeastern Brazil to Bolivia (Map 14).

**Records.** VENEZUELA: *Est. Aragua*. Rancho Grande, ♀, ♂ (MACN). GUYANA: Kuruabaru Riv., ♀ (BMNH); Kartabo (CUC); Rockstone (AMNH); Minnehaha Creek (AMNH); Kaietur (AMNH); Iku-ruwa River (AMNH); Essequibo Riv. (AMNH). SURINAME: *Saramacca*. Voltzberg-Raleighvallen Reserve, ♀, Feb. 1982, ♀, ♂ (D. Smith, MCZ). COLOMBIA: *Dept. Meta*. Carimagua, ♀ (MCZ); Villa-



Map 14. Distribution of *Micrathena pungens*.

vicencio, ♀ (AMNH); 45 km W of Villavencio (AMNH). *Boyacá-Santander*. Río Suárez, 800–1,000 m (AMNH). *Cundinamarca*. Bogotá, ♀ (NMW). *Caquetá*. Río Orteguzaza, 200 m (AMNH). ECUADOR: *Prov. Napo*. Tarapuy, ♀ (MECN); Napo headwaters, Río Arajuno, 1,000 m (AMNH). *Morona-Santiago*. Wakani, Chiguaza, ♀ (MCZ). PERU: *Dept. Loreto*. Iquitos (MCZ); Río Bombo, Alto Tapiche (AMNH). *Amazonas*. Montenegro, Bagua (AMNH). *San Martín*. 30 km SE of Moyobamba, 20 km NE of Moyobamba (AMNH); Río Alto Marañón, Río Campo Nueva (AMNH). *Huánuco*. Divisoria (?) (AMNH). *Pasco*. Puerto Bermudez, Río Pichis (CUC). BRAZIL: *Est. Pará*. Belém (MCZ); 50 km E of Canindé, ♀ (AMNH); Cachoeira, 5♀ (IBSP); Río Gurupi, 2♀ (MZSP). *Amazonas*. Taracuá, ♀ (NRS); Río Negro, São Gabriel, 2♀ (NRS); Manaus, ♀, ♂ (MEG); Reserve Ducke, NNE of Manaus, ♂ (AMNH). *Rondônia*. Pôrto Velho, ♀ (MCZ); Abunã, ♀ (MCZ); Vila Murinho, ♀ (MCZ). *Maranhão*. Chapade dos Guimarães, ♀ (AMNH). *Mato Grosso*. Aripuanã, ♀ (MCZ); 260 km N of Xavantina, Feb.–April 1969, juv. ♀, ♂ (Xavantino-Cachimbo Exped., MCZ). BOLIVIA: *Dept. Beni*. Vasa Diez, Cachueta Esperanza. April 1922, ♀ (J. H. Williamson,

MCZ). *La Paz*. Coroico, ♀ (E. Reimoser, MCZ).

### *Chaetacis* Simon

*Chaetacis* Simon, 1895: 863. Type species *Acrosoma affinis* C. L. Koch (= *C. aureola*) by original designation.

**Diagnosis.** *Chaetacis* species differ from other American Araneidae except *Micrathena* and *Gasteracantha* by having a sclerotized ring around the spinnerets. It differs from *Micrathena* and *Gasteracantha* by having swellings with tubercles or a prominent spine on each side of the head, behind the eyes (Figs. 792, 793, 803, 804, Table 3).

**Description.** Females of all species are 4.0 to 6.0 mm in total length, males between 2.5 and 4.0 mm.

All species have the carapace orange to orange-brown, the posterior of the thorax darker, and the rim and head swellings or spines lighter. The sternum in all species (except *C. woytkowskii*) is darker than the coxae, brown to black; the proximal articles of the legs are orange, distally darker brown to black. Appendages are never banded or striped. The abdomen is dorsally white with paired black patches, and the largest spines black. The sides and venter are dark with paired white patches. Sclerotized spots and disks are orange, the book-lung covers and ring around spinnerets often black.

In all females the carapace is longer than wide, with a prominent rim and a distinct round thoracic mark; the three pairs of dimples form grooves separated from each other by swellings. The head portion is smooth except for the pair of tubercular swellings or spines. The thorax may have additional indistinct tubercular swellings (*C. aureola*) or may be covered by small spines (Figs. 792, 793, 827, 828). The posterior median eyes are sometimes slightly larger than the anterior medians, both laterals or the posterior laterals only slightly smaller. The median eyes are their diameter of each pair apart. The fourth fe-

mur is slightly longer than the first. The proximal articles, including the coxae, are tuberculate, the fourth coxa and fourth femur most tuberculate or may have denticles.

The abdomen is covered by sclerotized disks characteristic also for *Micrathena*, as well as by rows of small disks on the sides, and tiny sclerotized spots in the dark colored areas of the dorsum, sides and venter. Unlike other Araneidae except *Micrathena*, the book-lung covers appear smooth and are covered by stridulating ridges only visible with a compound microscope (Plate 3). Tubercles on the fourth coxa or occasionally on the femur are presumably the pegs.

Males may have the carapace like that of the female, the swellings and tubercles less pronounced. There are distinct widely spaced teeth around the rim of most species (Figs. 818, 833). The legs are like those of the females but longer. The first coxa has no hook, the second femur no groove. Both endite and palpal femur lack the matching teeth. The first tibia is slightly sinuous in some males, strongly curved in *C. aureola* and *C. picta* (Figs. 833, 850). The abdomen of some species is smooth (Figs. 833, 850); others have pairs of spines like females (Figs. 809, 818).

*Genitalia.* The epigynum has a cone-shaped median bulge; on the posterior slope is a characteristic median plate. The bulge is truncate posteriorly (Figs. 806, 808) or pointed (Figs. 830, 832, 847-849). In the lateral borders of the posterior plate are the entrances to the short connecting canals. The seminal receptacles have distinctive shape and may be of diagnostic value (Figs. 794, 814). The profile of the epigynum is diagnostic (Figs. 797, 808, 817, 843).

The male palpus has a sclerotized embolus (Figs. 810, 819, 834) whose tip is held by a conductor. The tegulum has a tubular curved projection ventrally. There is an indistinct median apophysis having only a small sclerotized area. The paracymbium (Figs. 811, 820, 835, 836, 852,

861) is of distinctive shape in different species.

*Species Differences.* Species differ by the number of abdominal spines (Figs. 838, 845), and whether they have tubercles behind the eyes (Fig. 812) or a spine (Fig. 821). One female from "La Moka" [Caracas, Venezuela] (ZMK) had 13 spines on the abdomen: six left and seven right. The epigynum identified it as belonging to the 12-spined *C. carimagua*; some *C. aureola* also have 13 spines. Also, the tubercles and shape of the head spines are variable. Because the shape of the epigynum is also quite variable, the internal genitalia were illustrated; I am not certain if this is of value. Generally, specimens from one locality differ little from each other.

The males appear more distinct. Two species (*picta* and *aureola*) lack spines on the abdomen (Figs. 833, 850); *Chaetacis cucharas*, *C. cornuta* and *C. necopinata* have spines (Figs. 809, 818, 859). The paracymbium of palpi is also distinctively shaped (Figs. 811, 820, 835, 836, 852). Two species have the first tibia curved (*picta* and *aureola*). It may be that if more males were available, their placement would prove to be as uncertain as that of females.

*Natural History.* The long fourth femora suggest that *Chaetacis* hang in the web upside down with the abdomen held horizontal, as do *Micrathena*. However, little is known of the habits of the species.

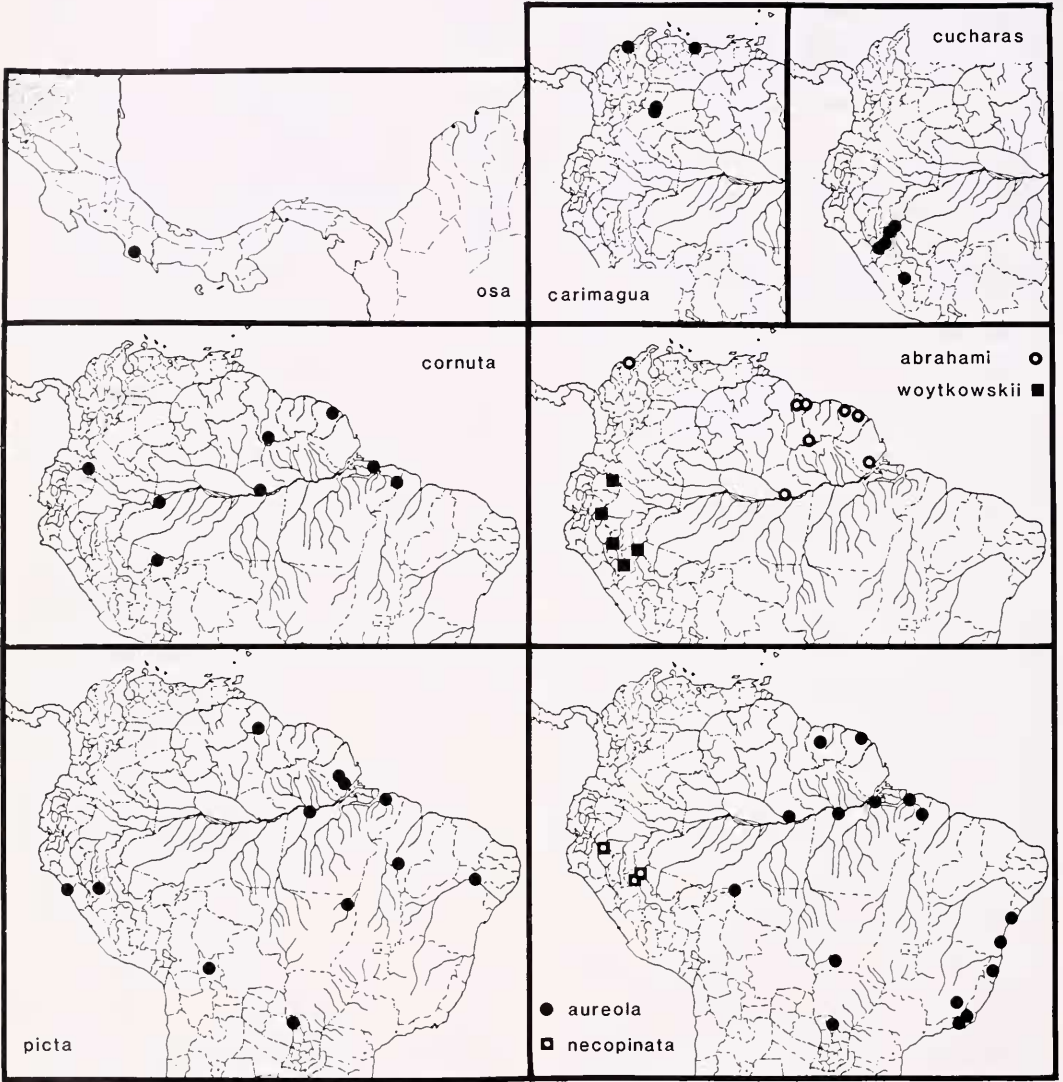
*Distribution.* The genus is only known from the neotropics.

*Misplaced.* *Chaetacis rouxi* Mello-Leitão, 1939 is *Micrathena quadriserrata* F. P.-Cambridge. *Plectana incisa* Walckenaer, 1841 is not recognizable except that it is not a *Chaetacis*.

#### KEY TO CHAETACIS

##### Females

1. Abdomen with 12 spines (Figs. 792, 798, 804, 812, 837) ..... 4
- Abdomen with (13 or) 14 spines (Figs. 827, 828, 844, 845, 853, 854) ..... 2
- 2(1) Carapace with pair of spines on head (Fig.



Map 15. Distribution of *Chaetacis* species.

- 853); abdomen longer than wide (Fig. 854), with 14 spines and a tubercle on each side between anterior two pairs of spines (Fig. 854) ..... *necopinata*
- Carapace with pair of swellings on head (Figs. 827, 844); abdomen about as long as wide, without anterior lateral tubercles (Figs. 828, 845); Guyana to Brazil ..... 3
- 3(2) Epigynum in profile with anterior and posterior slope of cone forming an acute angle (Fig. 849) ..... *aureola*
- Epigynum cone flat in profile (Fig. 832) ..... *abrahami*
- 4(1) Carapace with pair of spines on head (Figs. 803, 821) ..... 5
- Carapace with pair of swellings on head (which may have more than one denticle; Figs. 792, 798, 837) ..... 6
- 5(4) Abdomen square; fourth abdominal pair of spines larger than second (Figs. 803, 804); epigynum truncate in profile (Fig. 808); Guyana, Brazil to Colombia ..... *cornuta*

- Abdomen longer than wide; fourth abdominal pair of spines subequal to second (Fig. 822); epigynum pointed in profile (Fig. 826); Peru ..... *woytkowskii*
- 6(4) Abdomen trapezoidal, narrower in front than behind (Fig. 793); epigynum with notch in profile (Fig. 797); Costa Rica .... *osa*
- Abdomen with sides parallel (Figs. 799, 813, 838); epigynum otherwise (Figs. 802, 817); South America ..... 7
- 7(6) Epigynum truncate in profile (Fig. 802); Colombia, Venezuela ..... *carimagua*
- Epigynum pointed in profile (Figs. 817, 843) ..... 8
- 8(7) Epigynum with blunt point in profile; anterior and posterior surface meet at about 45° (Fig. 817); Peru ..... *cucharas*
- Epigynum with acute point in profile (Fig. 843); Brazil to Paraguay ..... *picta*

#### Males

The males of *osa*, *carimagua*, *woytkowskii*, *abrahami* are not known.

- 1. Abdomen without prominent spines (Figs. 833, 850) ..... 2
- Abdomen with spines (Figs. 809, 818, 859) ..... 3
- 2(1) First tibia with proximal and distal end of equal width (Fig. 850); Guyana to Rio de Janeiro ..... *aureola*
- Proximal end of first tibia swollen, bearing spines pointing at distal end (Fig. 833); Peru, Brazil to Paraguay ..... *picta*
- 3(1) Abdomen with 14 spines and a pair of humps between first and second pairs of spines (Fig. 859); Amazon ..... *necopinata*
- Abdomen with 12 spines or less ..... 4
- 4(3) Paracymbium with a hook at one end (Fig. 811); mesal side of palpus with a small hook on median apophysis (Fig. 810); Colombia, Guyanas to Brazil ..... *cornuta*
- Paracymbium only slightly curved (Fig. 820); mesal side of palpus without small hook on median apophysis (Fig. 819); Peru ..... *cucharas*

#### *Chaetacis osa* new species Figures 792–797; Map 15

*Holotype*. Female and broken female paratype from Rincón de Oro, Puntarenas Prov., Costa Rica (C. E. Valerio, MZCR). The specific name is a noun in apposition after the Osa Peninsula.

*Description*. Female. Carapace, sternum dark brown; carapace rim and anterior spines white. Legs brown. Dorsum of abdomen white with black patches; large spines brown; sides brown; venter brown

with median and paired white patches. Sclerotized areas dark brown. Carapace with anterior double denticles on swelling, three pairs of deep dimples, a deep thoracic depression and small denticles posteriorly (Figs. 792, 793). Abdomen trapezoidal, widest behind, with small white spines on anterior margin and three pairs of large spines with a small pair below, posteriorly (Figs. 792, 793). A tiny white spine on dorsal surface at base of posterolateral spine. Total length, 4.2 mm. Carapace, 1.6 mm long, 1.2 mm wide. First femur, 1.2 mm; patella and tibia, 1.3 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm; third, 0.7 mm. Fourth femur, 1.5 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm.

*Diagnosis*. *Chaetacis osa* differs from others by its distinctive epigynum (Figs. 795, 796) with a notch in profile (Fig. 797) and by the trapezoidal abdomen, widest behind (Fig. 793).

#### *Chaetacis carimagua* new species Figures 798–802; Map 15

*Holotype*. Female from Carimagua, 100 m el., Dept. Meta, Colombia, October 1973 (W. Eberhard, MCZ). The specific name is a noun in apposition after the type locality.

*Description*. Female. Carapace brown, swellings on each side of head lighter, rim white. Sternum dark brown, coxae light, distal articles of legs brown. Dorsum of abdomen black and white; venter blackish with a white spot on each side. Sclerotized spots brown. Carapace with two tubercular swellings on head, three pairs of dimples and distinct thoracic depression and rim (Figs. 798, 799). Eyes subequal in size. Abdomen squarish with twelve spines (Fig. 799). Total length, 4.4 mm. Carapace, 1.7 mm long, 1.2 mm wide. First femur, 1.4 mm; patella and tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm; third, 0.9 mm. Fourth femur, 1.8 mm; patella and tibia, 1.4 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 4.2 to 4.7 mm.

*Diagnosis.* The epigynum of this species has a transverse keel on the bulge and a round median plate behind (Figs. 801, 802), unlike *C. picta*.

*Distribution.* Venezuela, Colombia (Map 15).

*Paratypes.* COLOMBIA: *Dept. Meta.* Carimagua, Oct. 1973, ♀ (W. Eberhard, MCZ); 20 km N Río Muco, 20 km S El Porvenir, Finca Chenevo, 170 m, ♀ (W. Eberhard, MCZ). *Magdalena.* Río Frío, 15 Oct. 1927, ♀ (G. Salt, MCZ). VENEZUELA: *Est. Carabobo.* Maracay, 1935, ♀ (P. C. Vogt, MCZ).

***Chaetacis cornuta* (Taczanowski)**  
**Figures 803–811; Map 15**

*Acrosoma cornuta* Taczanowski, 1873: 268, pl. 5, fig. 22, ♀. Female holotype from Cayenne, French Guiana (PAN), examined.

*Chaetacis cornuta*:—Roewer, 1942: 952. Bonnet, 1956: 1031.

*Description.* Female. Carapace with large spine behind eyes (Figs. 803, 804). Abdomen with six pairs of spines, three pairs dorsal, the second and fourth large and black (Figs. 803, 804). Total length, 4.0 mm. Carapace, 1.7 mm long, 1.3 mm wide. First femur, 1.3 mm; patella and tibia, 1.4 mm; metatarsus, 0.9 mm; tarsus, 0.7 mm. Second patella and tibia, 1.2 mm; third, 0.8 mm. Fourth femur, 1.6 mm; patella and tibia, 1.4 mm; metatarsus, 1.0 mm; tarsus, 0.7 mm.

Male. Carapace with three pairs of dimples and circular thoracic mark; margin serrated. Side of head with swelling

(Fig. 809). Abdomen with six pairs of spines (Fig. 809). Total length, 2.9 mm. Carapace, 1.2 mm long, 1.0 mm wide. First femur, 1.1 mm; patella and tibia, 1.2 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm. Second patella and tibia, 1.1 mm; third, 0.6 mm. Fourth femur, 1.2 mm; patella and tibia, 0.9 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm.

*Variation.* Females vary from 4.3 to 5.1 mm in total length, males from 2.9 to 3.0 mm. The cone of the epigynum of Colombian specimens is longer than that of specimens from Brazil. The female from Alto Solimões had the abdomen longer than wide.

*Note.* Males have been collected twice with females in Colombia. Figures 803, 804, 806–808 were made from the holotype of *C. cornuta*.

*Diagnosis.* Females differ from most other species by having a spine on each side of the head and by having only twelve spines on the abdomen (Figs. 803, 804). It differs from *M. woytkowskii* by having the abdomen squarish and the truncate epigynum (Figs. 804, 808). The paracymbium of the male has a diagnostic hook (Fig. 811).

*Distribution.* Guianas, Amazon area (Map 15).

*Records.* COLOMBIA: *Putumayo.* near Puerto Asis, 4♀, ♂ (W. Eberhard MCZ); Buena Vista, 3♀, 2♂ (W. Eberhard, MCZ). GUYANA: 1913, ♀ (Parrish, CUC); Kuyuwini Riv., Essequibo Riv., 22 Nov. 1937, Dec. 1937, ♀ (W. G. Hassler, AMNH). BRAZIL: *Est. Pará.* 12 km W of Canindé, Rio Gurupi, April 1963, 3♀ (B. Malkin,

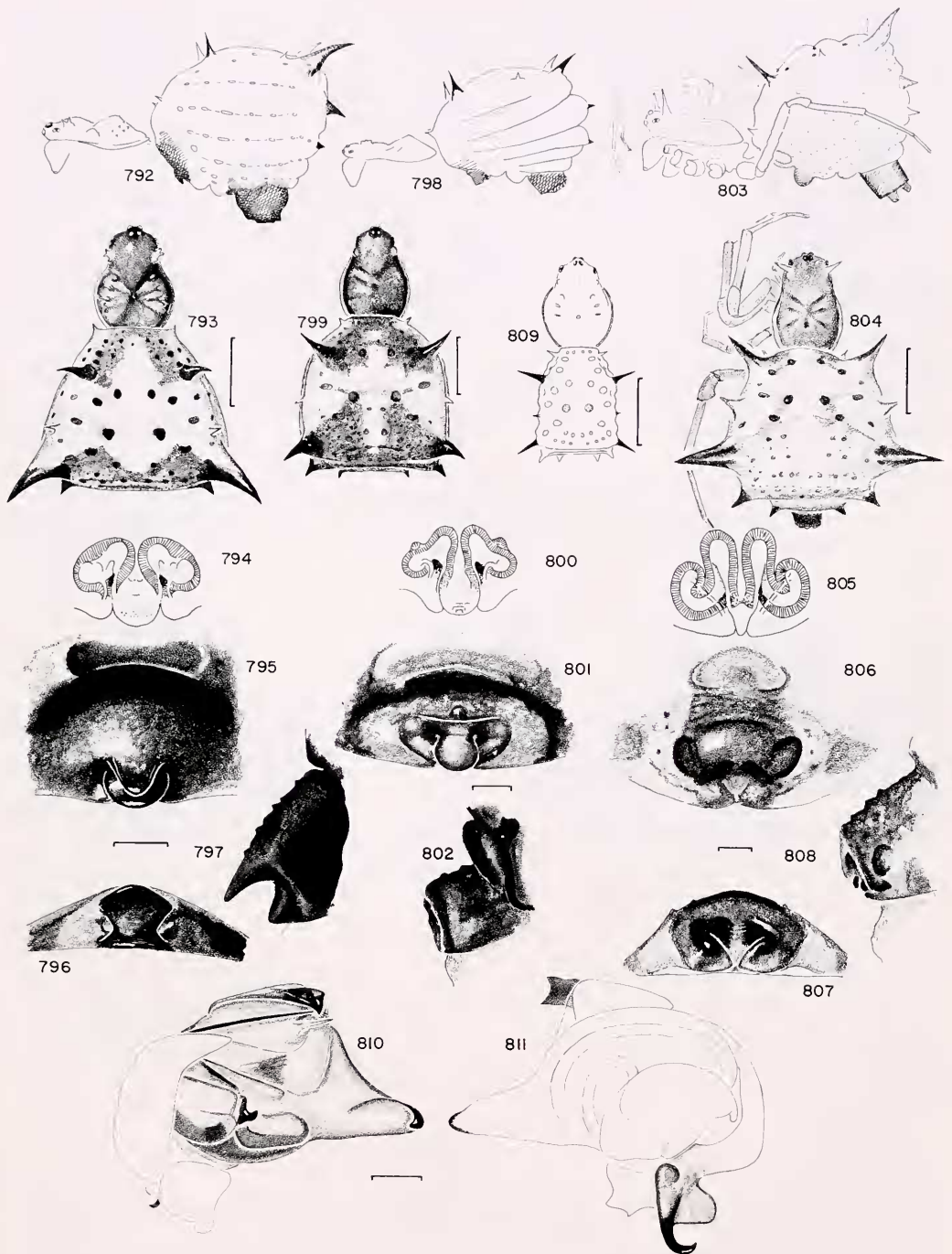
Figures 792–797. *Chaetacis osa* n. sp., female. 792. Lateral. 793. Dorsal. 794–797. Epigynum. 794. Dorsal, cleared. 795. Ventral. 796. Posterior. 797. Lateral.

Figures 798–802. *Chaetacis carimagua* n. sp., female. 798. Lateral. 799. Dorsal. 800–802. Epigynum. 800. Dorsal, cleared. 801. Ventral. 802. Lateral.

Figures 803–811. *Chaetacis cornuta* (Taczanowski). 803–808. Female. 803. Lateral. 804. Dorsal. 805–808. Epigynum. 805. Dorsal, cleared. 806. Ventral. 807. Posterior. 808. Lateral. 809–811. Male. 809. Dorsal. 810. Left palpus, mesal. 811. Palpus, lateral.

*Scale lines.* 0.1 mm, except Figures 792, 793, 798, 799, 803, 804, 809, 1.0 mm.





AMNH); Canindé, June 1963, ♀ (B. Malkin, AMNH), 1964, 6♀ (J. Carvalho, AMNH); Cachoeira, Nov. 1952, ♀ (A. R. Hoge, IBSP). *Amazonas*. Manaus, Aug. 1971, ♀ (M. E. Galiano, MEG); Alto Solimões, Dec. 1979, ♀ (A. Lise, FZRS). *Acré*. Rio Alto Purus, W of Sena Madureira, 8 Nov. 1973, ♀ (B. Patterson, MCZ).

*Chaetacis cucharas* new species  
Figures 812–820; Map 15

*Holotype*. Female with male paratype from Cucharas, Huallaga Valley, Dept. Huánuco, Peru, April 1954 (F. Woytkowski) in the Museum of Comparative Zoology. The specific name is a noun in apposition after the type locality.

*Description*. Female. Carapace brown with head swellings and rim lighter. Sternum dark brown, legs brown. Dorsum of abdomen dark brown with white patches; sides, venter brown. Carapace with three pairs of deep grooves, rim, thoracic depression; swellings on each side of head have denticles (Fig. 812). Abdomen square with fairly long spines (Figs. 812, 813). Total length, 5.0 mm. Carapace, 1.8 mm long, 1.3 mm wide. First femur, 1.3 mm; patella and tibia, 1.6 mm; metatarsus, 0.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.4 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.6 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

Male. Orange except for black abdomen spines and black book-lungs. Carapace with three pairs of dimples, circular thoracic depression and teeth around thoracic margin. Scattered small blunt teeth on head and carapace (Fig. 818). First tibia slightly S-shaped. Abdomen longer than wide, with twelve spines (Fig. 818). Total

length, 3.0 mm. Carapace, 1.3 mm long, 1.0 mm wide. First femur, 1.0 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.1 mm; third, 0.6 mm. Fourth femur, 1.1 mm; patella and tibia, 1.0 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm.

*Variation*. Females vary in total length from 4.2 to 5.2 mm, males from 2.6 to 3.2 mm.

*Note*. Males and females have been collected together several times, but one male was collected with *C. woytkowskii* at Las Palmas, Peru.

*Diagnosis*. The bulge of the female epigynum is lower than that of *C. picta* (Figs. 815–817) and, unlike other species, the inner and outer parts of the seminal receptacles are of equal length (Fig. 814). The male differs from others by the tubular shape of the paracymbium (Fig. 820) and the triangular shape of the conductor (Fig. 819).

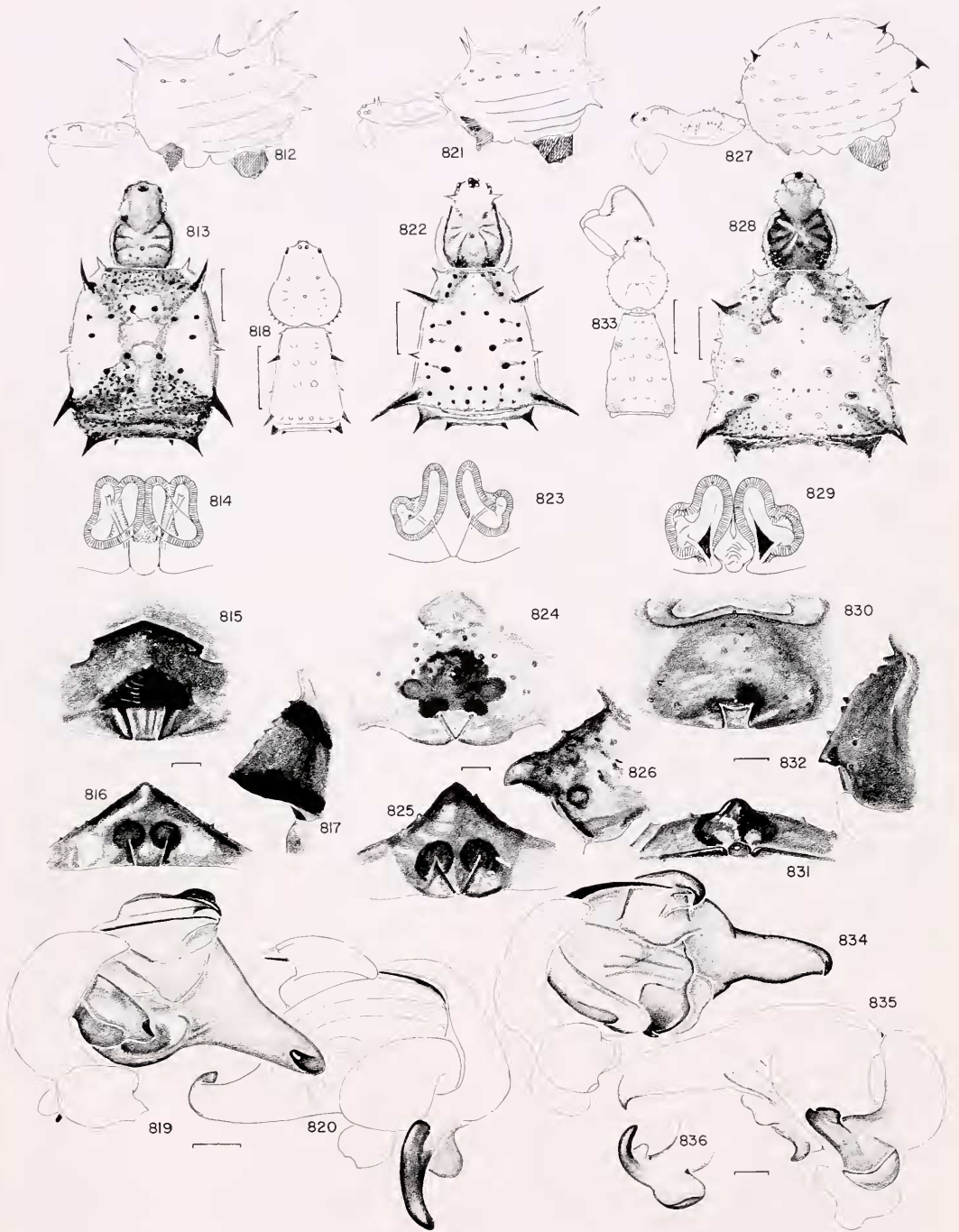
*Distribution*. Peru (Map 15).

*Paratypes*. PERU: *Dept. Ucayali*. Colonia Calleria, 15 km from Ucayali, 1–16 Oct. 1961, 5♀, 2♂ (B. Malkin, AMNH); Pucallpa, Nov. 1946, ♀ (J. C. Pallister, AMNH). *Huánuco*. Cucharas, Huallaga Valley, Feb.–April 1954, 2♀, 2♂ (F. Woytkowski, EPC); Tingo María, 2 June 1967, ♀ (A. F. Archer, AMNH), Oct. 1946, ♀, 21 Nov. 1946, 2♀, 28 May 1947, ♀ (J. C. Pallister, AMNH); Yurac, 107 km E of Tingo María, 16 Nov. 1954, ♀ (E. I. Schlinger, E. S. Ross, CAS); Monsón Valley, Tingo María, 1954, numerous coll. of ♀♀, ♂♂ (E. I. Schlinger, E. S. Ross, CAS); 8 km W Las Palmas, 5 Oct. 1954, ♂ (E. I. Schlinger, E. S. Ross, CAS). *Ayacucho*. Monterico, ♂ (D. Jelski, PAN).

Figures 812–820. *Chaetacis cucharas* n. sp. 812–817. Female. 812. Lateral. 813. Dorsal. 814–817. Epigynum. 814. Dorsal, cleared. 815. Ventral. 816. Posterior. 817. Lateral. 818–820. Male. 818. Dorsal. 819. Left palpus, mesal. 820. Palpus, lateral.

Figures 821–826. *Chaetacis woytkowskii* n. sp., female. 821. Lateral. 822. Dorsal. 823–826. Epigynum. 823. Dorsal, cleared. 824. Ventral. 825. Posterior. 826. Lateral.

Figures 827–832. *Chaetacis abrahami* Mello-Leitão, female. 827. Lateral. 828. Dorsal. 829–832. Epigynum. 829. Dorsal, cleared. 830. Ventral. 831. Posterior. 832. Lateral.



Figures 833-836. *Chaetacis picta* (C. L. Koch), male. 833. Dorsal. 834. Palpus, mesal. 835. Palpus, lateral. 836. Paracymbium, lateral (Peru).

Scale line. 0.1 mm, except Figures 812, 813, 818, 821, 822, 827, 828, 833, 1.0 mm.

*Chaetacis woytkowskii* new species

Figures 821–826; Map 15

*Holotype.* Female and ten female paratypes from Cucharas, Huallaga Valley, Dept. Huánuco, Peru, Feb.–April 1954 (F. Woytkowski, MCZ). The species is named after the collector.

*Description.* Female. Carapace orange, black posteriorly. Sternum, legs orange. Dorsum of abdomen white except for large black spines; sides, venter orange; heavily sclerotized areas black. Carapace with two spines on head, three pairs of dimples in grooves, distinct thoracic depression and a very wide rim (Figs. 821, 822). Abdomen with twelve spines; longer than wide, widest posteriorly (Figs. 821, 822). Total length, 4.8 mm. Carapace, 1.9 mm long, 1.4 mm wide. First femur, 1.6 mm; patella and tibia, 1.6 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm. Second patella and tibia, 1.3 mm; third, 0.9 mm. Fourth femur, 1.8 mm; patella and tibia, 1.5 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

*Variation.* Females vary in total length from 4.5 to 5.0 mm.

*Note.* A male collected with females at Las Palmas, Peru appeared to be *M. cucharas*, and was placed with that species.

*Diagnosis.* *Chaetacis woytkowskii* differs from *C. cornuta* by having a longer abdomen, the second and fourth spines subequal in size (Figs. 821, 822), and by having the epigynum more cone-shaped in profile (Figs. 825, 826); it differs from *M. cucharas* by having spines rather than tubercles behind the eyes (Figs. 821, 822).

*Distribution.* Ecuador, Peru (Map 15).

*Paratypes.* ECUADOR: *Prov. Napo.* R. F. Cuyabeno, 14 Feb. 1984, ♀ (L. Avilés, MECN). PERU: *Dept. Huánuco.* Cucharas, Huallaga Valley, Feb.–April 1954, 47♀ (F. Woytkowski, EPC); Santa Teresa, Huallaga Valley, Aug. 1954, 6♀ (F. Woytkowski, EPC); Tingo María, Monsón Valley, 26 Oct. 1954, ♀, 19 Oct. 1954, ♀, 28 Oct. 1954, 2♀ (E. I. Schlinger, E. S. Ross, CAS), 8 Oct. 1948, ♀, 26 May 1947, ♀ (J. C. Pallister, AMNH), 5 June 1967, 2♀ (A. F. Archer, AMNH), Oct. 1946, ♀ (W.

Weyrauch, EPC); 8 km W Las Palmas, 5 Oct. 1954, ♀ (E. I. Schlinger, E. S. Ross, CAS). *San Martín.* Bellavista, 11 Dec. 1946, ♀, ♂ (J. C. Pallister, AMNH). *Amazonas.* Río Alto Marañón betw. Río Campa and Río Nieva, 10–24 Sept. 1924, ♀ (Klug, AMNH). *Ucayali.* Río Calleria, 15 km from Ucayali, Oct. 1961, 3♀ (B. Malkin, AMNH).

*Chaetacis abrahami* Mello-Leitão

Figures 827–832; Map 15

*Chaetacis abrahami* Mello-Leitão, 1948: 162. Female holotype from Yawakuri River, Guyana, July 1919 (BMNH), examined.

*Chaetacis minima* Mello-Leitão, 1948: 163. Immature male and immature female syntypes from Kuruabaru Creek, Guyana, Sept. 1919 (BMNH), examined. NEW SYNONYMY.

*Chaetacis tuberculata* Chickering, 1959: 472, figs. 20–24. ♀. Female holotype and one paratype from source of Kutari River, British Guyana (BMNH), examined. NEW SYNONYMY.

*Synonymy.* The type vial of *C. abrahami* is labeled “manuscript name” in Chickering’s handwriting. The species description has been missed by the Zoological Record, and Chickering apparently overlooked it. It is recorded in the Brignoli (1983) catalog. *C. minima* are immatures with the full number of spines.

*Description.* Female. Carapace with head swellings bearing denticles (Fig. 828); thoracic region with a median depression and four deep grooves dividing swellings bearing teeth. Abdomen squarish with seven pairs of spines. Total length, 5.2 mm. Carapace, 2.0 mm long, 1.4 mm wide. First femur, 1.5 mm; patella and tibia, 1.6 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm. Second patella and tibia, 1.3 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.4 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

*Variation.* Females varied from 4.5 to 5.2 mm.

*Note.* The male is unknown; a male of *Micrathena pungens* has been collected with this species in Manaus.

*Diagnosis.* This species differs from *C. aureola* and other 14-spined species by the relatively flat epigynum (Figs. 830–832).

*Distribution.* Colombia, Guyana to Mato Grosso, Brazil (Map 15).

*Records.* GUYANA: Canje, Ikuruwa River, 1961, ♀ (G. Bentley, AMNH). FRENCH GUIANA: Cayenne, ♀ (K. Jelski, PAN); St. Laurent de Maroni, 6♀ (K. Jelski, PAN). COLOMBIA: *Dept. Magdalena*. Río Frío, 25 July 1926, ♀ (F. W. Walker, AMNH). BRAZIL: *Terr. Amapá*. Villa Amazonas, 29 May 1964, 8♀ (C. E., E. S. Ross, CAS). *Est Amazonas*. Manaus, Aug. 1971, 3♀ (M. E. Galiano, MEG). *Mato Grosso*. Oct. 1976, ♀ (M. Alvarenga, AMNH).

*Chaetacis picta* (C. L. Koch)  
Figures 833–843; Map 15

*Acrosoma pictum* C. L. Koch, 1836: 61, pl. 214, ♀. Female from Brazil (ZSM), destroyed.

*Micrathena conspicua* Mello-Leitão, 1929: 110, pl. 21, ♀. Female holotype from Tapera, Pernambuco, in vial labeled *M. tigris* (MNRJ), examined; 1932, fig. 3, ♀. NEW SYNONYMY.

*Chaetacis evansi* Chickering, 1959: 469, figs. 12–16, ♂. Male holotype from Monte Allegro Forest, Santarém, Brazil (BMNH), examined. NEW SYNONYMY.

*Chaetacis rugosa* Chickering, 1959: 471, figs. 17–19, ♀. Female holotype, four female paratypes from Monte Allegro Forest, Santarém, Brazil (BMNH), examined. NEW SYNONYMY.

*Synonymy.* Koch's illustration for a twelve-spined *Chaetacis* fits this species best, particularly the color markings. Chickering named the male *evansi*, the female *rugosa*.

*Description.* Female. Thorax with four pairs of dark grooves; tiny spines between third and fourth grooves (Figs. 837, 838). Abdomen squarish with six pairs of spines and many small sclerotized disks (Figs. 837, 838). Total length, 5.4 mm. Carapace, 1.9 mm long, 1.4 mm wide. First femur, 1.4 mm; patella and tibia, 1.5 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm. Second patella and tibia, 1.2 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.4 mm; metatarsus, 1.1 mm; tarsus, 0.5 mm.

Male holotype of *evansi*. Carapace with small teeth around edge, two small areas bearing teeth on head, one on each side,

and three pairs of swollen areas on carapace (Fig. 833). Abdomen without spines, longer than wide, narrower anteriorly than posteriorly, with folds on posterior and anterolateral edges. First leg with tibia swollen at proximal end, distal end strongly curved (Fig. 833). Total length, 3.4 mm. Carapace, 1.6 mm long, 1.1 mm wide. First femur, 1.0 mm; patella and tibia, 1.2 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm. Second patella and tibia, 1.2 mm; third, 0.6 mm. Fourth femur, 1.4 mm; patella and tibia, 1.0 mm; metatarsus, 0.7 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 4.0 to 5.6 mm. Females from Mato Grosso may have the tubercular swellings in the head region cone-shaped. They perhaps belong to a different species.

*Note.* The only male collected with a female came from Santana, Rio Matapí. It is uncertain whether they belong together. However, both female and male resemble the 14-spined *C. aureola*. The illustrations (Figs. 837–841) were made from the type of *C. rugosa*; those of the male (Figs. 833–835) from *C. evansi*. The male appears to have its paracymbium broken. The paracymbium of the male from Peru is also illustrated (Fig. 836).

*Diagnosis.* The female can be separated from other 12-spined species by the longer cone-shaped bulge of the epigynum (Figs. 841–843). The male can be distinguished by the shape of the paracymbium and the swollen first tibia (Figs. 833, 835, 836). The species is probably close to *C. aureola*.

*Range.* Guyana to Paraguay (Map 15).

*Records.* GUYANA: *Kartabo*. 1924, ♀ (CUC). PERU: *Dept. Huánuco*. Monsón Valley, Tingo María, 12 Oct. 1942, ♂ (E. I. Schlinger, E. S. Ross, CAS). BRAZIL: *Terr. Amapá*. Santana, Rio Matapí, June 1966, 2♀, ♂, imm. (M. E. Galiano, MEG); Serra do Navio, June 1966, 2♀ (M. E. Galiano, MEG). *Est. Pará*. Val-de-Cans, Belém, 20–21 Nov. 1963, ♀ (Oliveira, P. Wygodzinsky, AMNH). *Maranhão*. Santa Barbara, São Felix de Balsas, May–June 1965, 2♀ (G. Eiten, AMNH). *Mato Grosso*.

Jaciara, June 1963, ♀ (M. Alvarenga, AMNH); Barra do Tapirapé, Nov. 1960, 2♀, Dec. 1961, ♀ (B. Malkin, AMNH). BOLIVIA: *Dept. Cochabamba*. Feb. 1952, ♀ (Martina, MULP). PARAGUAY: San Luiz [?], Oct. 1908, ♀ (AMNH).

*Chaetacis aureola* (C. L. Koch)

Figures 844–852; Map 15

*Acrosoma aureolum* C. L. Koch, 1836: 60, fig. 213, ♀. Female from Brazil (ZSM), destroyed.

*Acrosoma affinis* C. L. Koch, 1839: 131, fig. 525, ♀. Female from Brazil (ZSM), destroyed. NEW SYNONYMY.

*Chaetacis affinis*:—Simon, 1895: 863. Roewer, 1942: 951. Bonnet, 1956: 1030.

*Chaetacis hirsuta* Mello-Leitão, 1932:96, fig. 7, ♀. Female holotype from Pará [Belém], Brazil (MNRJ), examined. NEW SYNONYMY.

*Chaetacis aculeata* Chickering, 1959: 466, figs. 1–5, ♀. Female holotype from Gurupá, Brazil (BMNH), examined. NEW SYNONYMY.

*Chaetacis dentata* Chickering, 1959: 468, figs. 6–11, ♂. Male holotype from Gurupá, Brazil (BMNH), examined. NEW SYNONYMY.

*Synonymy.* The description of *A. aureolum* fits this species, although C. L. Koch does not mention or show the head swellings. They are at times quite indistinct. Koch later gave a description of the diagnostic head swellings and the spination for *A. affinis*, leaving no doubt as to its identity. Chickering named the female *aculeata*, the male *dentata*.

*Description.* Female. Carapace with spiny swellings on each side of head; dimples on each side of thorax in deep grooves; bulges between grooves with denticles. Abdomen almost square in dorsal view, with seven spines on each side, the second and fifth the largest, and many sclerotized discs, both large and minute (Figs. 844, 845). Total length, 5.0 mm. Carapace, 1.9

mm long, 1.4 mm wide. First femur, 1.5 mm; patella and tibia, 1.6 mm; metatarsus, 1.0 mm; tarsus, 0.5 mm. Second patella and tibia, 1.4 mm; third, 0.9 mm. Fourth femur, 1.9 mm; patella and tibia, 1.4 mm; metatarsus, 1.2 mm; tarsus, 0.5 mm.

Male. Carapace like female. Patella of first leg with a small lobe on outside, bearing a macroseta. Tibia of first leg very curved and with macrosetae on underside. Abdomen trapezoidal, without spines (Fig. 850). Total length, 3.0 mm. Carapace, 1.4 mm long, 1.0 mm wide. First femur 0.9 mm; patella and tibia, 0.9 mm; metatarsus, 0.6 mm; tarsus, 0.4 mm. Second patella and tibia, 1.0 mm; third, 0.6 mm. Fourth femur, 1.2 mm; patella and tibia, 0.9 mm; metatarsus, 0.6 mm; tarsus, 0.4 mm.

*Variation.* Females vary 4.5 to 5.2 mm total length, males 3.0 to 3.8 mm. Many females have a longer, larger swelling with denticles on each side of the head. But the size of these denticles is variable. Several females from Rio de Janeiro have 13 spines on the abdomen, missing a small one on one side. The shape of the epigynal cone is variable. The paracymbium is longer in the palpus of a male from Rio de Janeiro.

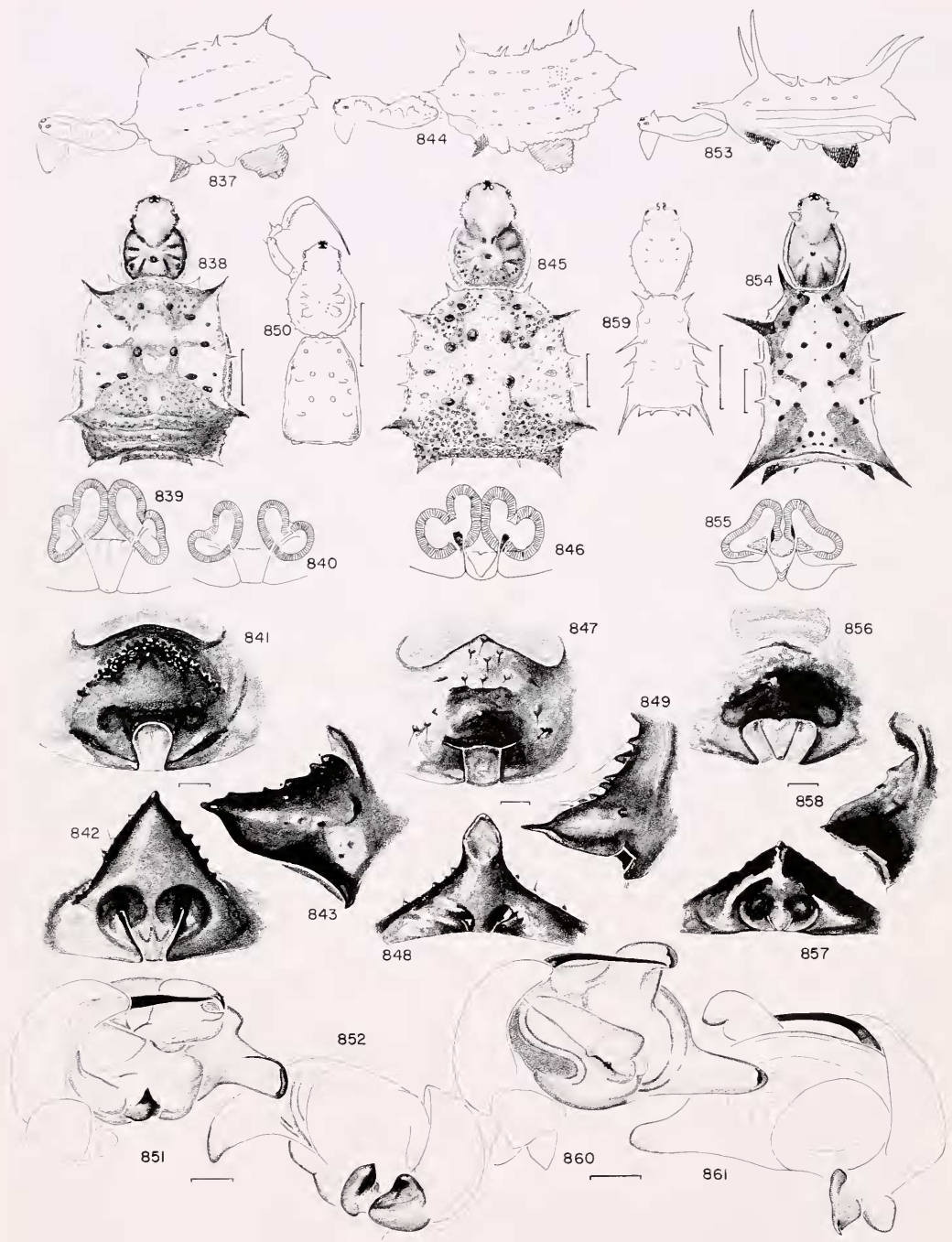
*Note.* Males are commonly collected with females. Penultimate females have the same number of abdominal spines on the abdomen as adult females. Figures 844–849 were made from paratypes of *C. aculeata*; Figures 850–852 from the holotype of *C. dentata*.

*Diagnosis.* Females differ from *C. picta* by having 14 rather than 12 spines (Figs. 844, 845); males by the differently shaped paracymbium (Fig. 852). Females of *C. aureola* differ from *C. abrahami* by hav-

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Figures 837–843. *Chaetacis picta* (C. L. Koch), female. 837. Lateral. 838. Dorsal. 839–843. Epigynum. 839, 840. Dorsal, cleared. 841. Ventral. 842. Posterior. 843. Lateral. 839. (Belém, Brazil). 840. (Barra da Tapirapé, Brazil). 841–843. (Santarém, Brazil).

Figures 844–852. *Chaetacis aureola* (C. L. Koch). 844–849. Female. 844. Lateral. 845. Dorsal. 846–849. Epigynum. 846. Dorsal, cleared. 847. Ventral. 848. Posterior. 849. Lateral. 850–852. Male. 850. Dorsal. 851. Left palpus, mesal. 852. Palpus, lateral.



Figures 853–861. *Chaetacis necopinata* (Chickering). 853–858. Female. 853. Lateral. 854. Dorsal. 855–858. Epigynum. 855. Dorsal, cleared. 856. Ventral. 857. Posterior. 858. Lateral. 859–861. Male. 859. Dorsal. 860. Palpus, mesal. 861. Palpus, lateral. Scale lines. 0.1 mm, except Figures 837, 838, 844, 845, 850, 853, 854, 859, 1.0 mm.

ing a cone-shaped epigynum (Figs. 847–849).

*Natural History.* Specimens have been collected by D. Smith in Suriname in swamp forest with the web center 1 m above the ground, and in mountain savannah forest, 45 cm above the ground.

*Distribution.* Suriname to southeastern Brazil (Map 15).

*Records.* SURINAME: *Saramacca Prov.* Voltzberg-Raleighvallen Nature Reserve, Feb. 1982, 5♀, ♂ (D. Smith Trail, MCZ). FRENCH GUIANA: Cayenne, ♀ (K. Jel-ski, PAN). BRAZIL: *Est. Pará.* Santarém, forest, 1896, 3♀ (F. O. P.-Cambridge, E. E. Austin, BMNH); Belém, 12 Feb. 1959, ♀, ♂ (A. M. Nadler, AMNH), July 1971, ♀ (T. McGrath, MCZ); 50 km E of Canindé, Rio Gurupi, 22–25 Feb. 1966, ♀, ♂ (B. Malkin, AMNH). *Amazonas.* Manaus, Aug. 1971, ♀ (M. E. Galiano, MEG). *Ron-dônia.* Abunã, March 1922, ♀ (J. H. Williamson, MCZ). *Bahia.* Itamarajú, 7 Dec. 1978, ♀ (J. Santos, FZRS); Camacari, 2 Dec. 1977, ♂ (J. Santos, FZRS); Ilhéus, Jan. 1964, 2♀ (Papavero, FZRS), ♀ (MZSP). *Mato Grosso.* Chapada dos Guimarães, Nov. 1963, 2♀, ♂ (M. Alvarenga, AMNH). *Minas Gerais.* Ponte Nova, Rio Casca, Feb. 1953, ♀ (Schubart, MZSP). *Rio de Janeiro.* San Antonio do Imbé, Jan. 1961, 8♀, ♂ (M. Alvarenga, AMNH); Pinheiro, ♀ (MNRJ). PARAGUAY: *Dept. Amambay.* Cerro Corá, Oct. 1981, ♀ (J. Kochalka, JAK).

*Chaetacis necopinata* (Chickering) new combination  
Figures 853–861; Map 15

*Micrathena necopinata* Chickering, 1960c: 84, figs. 71–73, ♂. Male holotype from the Amazon (HEO), examined.

*Note.* The exact type locality is unknown.

*Description.* Female. Carapace orange with white rim; black patch posteriorly on each side of thorax. Sternum dark brown. Coxae and femora orange, distal articles of legs brown. Dorsum of abdomen white

with black patches; sides white and black; venter white and black with book-lungs black; ring around spinnerets black. Carapace with two semi-triangular spines on head, fairly smooth, with two pairs of dimples, a round thoracic depression and rim. Abdomen longer than wide, with 14 spines and pair of tubercles anterolaterally (Figs. 853, 854); dorsal white areas smooth; dark posterior and ventral areas punctate. Total length, 6.2 mm. Carapace, 2.3 mm long, 1.5 mm wide. First femur, 1.9 mm; patella and tibia, 1.9 mm; metatarsus, 1.3 mm; tarsus, 0.6 mm. Second patella and tibia, 1.7 mm; third, 1.2 mm. Fourth femur, 2.4 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.6 mm.

Male. Carapace with pair of spines in head region, two pairs of indistinct dimples, distinct thoracic depression, and thoracic area rough. First leg not modified. Abdomen with 14 spines (Fig. 859). Total length, 3.4 mm. Carapace, 1.4 mm long, 0.9 mm wide. First femur, 1.2 mm; patella and tibia, 1.2 mm; metatarsus, 0.9 mm; tarsus, 0.4 mm. Second patella and tibia, 1.1 mm; third, 0.6 mm. Fourth femur, 1.3 mm; patella and tibia, 1.0 mm; metatarsus, 0.8 mm; tarsus, 0.4 mm.

*Variation.* Females vary in total length from 4.9 to 6.1 mm.

*Note.* The spination of the abdomen and the head spine suggest that the female belongs with the male of *C. necopinata*.

*Diagnosis.* This is the only species having 14 abdominal spines and a pair of spines (rather than swellings) on the head (Figs. 853, 854). The male differs from all others by having a pair of spines on the head and having 14 abdominal spines (Fig. 859).

*Distribution.* Northeastern Peru (Map 15).

*Paratypes.* PERU: *Dept. Amazonas.* Río Alto Marañón, betw. Río Campa and Río Nieva, Sept. 1924, ♀ (Klug, AMNH). *Ucayali.* Colonia Calleria, Río Calleria, 15 km from Ucayali, 10–30 Sept. 1961, ♀, 1–16 Oct. 1961, ♀ (B. Malkin, AMNH); Pu-



callpa, 2 Oct. 1954, ♀ (E. I. Schlinger, E. S. Ross, CAS).

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